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AN increase of venereal disease (V.D.) was formerly one of the aftermaths of war. "Post bellum Venus venit." This statement now requires some qualification. Gonorrhœa and her grim sister syphilis are even now striding throughout the land, and I believe with increasing vigour, while the battle still rages.[1]

A further increase in the victims of Venus when peace is declared is inevitable. The emotional condition of the nation will be intensely susceptible to various stimuli, and correlated to this there will be a widespread outburst of promiscuous sexual activity, with much resultant venereal disease. The pathological aggregate will be further augmented by the influx into this country of thousands of men and women, many of whom will be suffering from these disorders in a chronic and, in their estimation, in a non-infectious condition. Here is a menace to the national health the immensity of which cannot be realised. The number of such cases no man can forecast, but of necessity it will be great.

It is obvious that many practitioners will be called upon in the immediate future to treat V.D. to whose purview in the past such cases have never or only rarely been presented. Upon such will rest a great responsibility—the responsibility of deciding whether patients suffering from V.D. are in a condition to assume or resume conjugal relations. Upon their dicta will also hang the fate of thousands of other men and women. If their verdicts be carelessly passed large numbers of the unmarried, fallaciously encouraged by the verdict of "cured," will pass from consulting-rooms and clinics as disseminators of the disease of which they believed themselves to be cured. The responsibility applies in cases of syphilis and gonorrhœa, but I am more immediately concerned with the question of the latter. For reasons I need not enunciate, I am convinced that the national health will be endangered to a far greater extent by the latter rather than by the former.

To treat imperfectly or to discharge prematurely a patient suffering from pneumonia may imperil his health and possibly cause his death. Similar neglect with regard to a case of venereal disease *must* imperil the health and may cause the death of many individuals.

Apart from the purely human factor reference should be made to the great economic saving which the nation would achieve if every case of gonorrhœa was searchingly tested before being "discharged as cured." Not only would the expense incurred by the community for further treatment, involved by the recrudescence of the disease after the pseudo-cure had taken place, be saved, but many thousands of new cases infected by the imperfectly cured would never ensue and the cost of their treatment would thus be obviated. If the reduction in efficiency of these individuals were taken into account in terms of work-days lost, it would be realised how great a national gain would thus be achieved.

[1] This was written before the cessation of hostilities.

In the past (a very recent past) the task of examining a patient suffering from gonorrhœa before discharging him as cured generally fell upon the medical man who had treated the case. To-day his responsibility is a great one, but one which is more easily discharged. It is in many cases a comparatively simple matter to send the patient to a Local Government Board clinic with a request for a thorough examination to be made as to whether he is cured. Such a test should be carried out at least on two separate occasions, after a due cessation of treatment.

It is true there are still towns and large country areas without a clinic. It is impossible to over-estimate the crass lack of prevision on the part of the responsible municipal or other authorities who thus fail to make provision for the reduction of suffering and disease among their fellow-creatures.

It is impossible to conceive of any adequate explanation; it is equally impossible to think that public opinion will allow national health thus to continue to be menaced by such factors as pseudo-religion or meticulous municipal and other jealousies, which thus stand in the way of normal hygienic development.

Venereal disease has been a sociological problem; it is now becoming a biological factor. In passing, I would quote from Norris:—

"There is probably no other disease known to medical science that has caused as much suffering and sorrow throughout the civilised world as has gonorrhœa. Neisser states that, with the exception of measles, gonorrhœa is the most widespread of all diseases. It is the most potent factor in the production of 'race suicide,' and, by sterilisation and abortion, does more to depopulate the country than does any other one cause. The number of deaths annually that can be traced directly to this disease is difficult to estimate, but it is undoubtedly large. The majority of deaths due to this disease are usually under other headings in mortality statistics." (Norris on "Gonorrhœa in Women.")

These words are as a trumpet-call to efficiency of treatment. It is in the atmosphere they conjure up that I venture to submit the following fundamental principles for consideration in relation to a disease which is essentially a curable and almost entirely a preventable one.

I. ON THE NECESSITY OF EXERCISING THE MOST RIGOROUS STANDARD OF CURE.

It is but the enunciation of a platitude to state that the standard of test for cure is a variable one. The verdict of cured is given at times solely on the grounds that there is no discharge (with or without a macroscopic examination of the urine). Between this the lowest rung of the ladder of tests and the highest in the shape of the scientific and relatively exhaustive "marriage tests" there are many intermediate steps.

In gonorrhœa the most rigorous test possible should be utilised. If such a test was always insisted upon the verdict "cured" would not result in the tragedies which too often follow in its train.

The appreciation of the abstract is sometimes more easily realised by a statement of the concrete. With a view to pressing home an insistent plea for the universal application of a higher standard of cure, I will deal with a case which may be regarded as typical of a lamentably large group of patients. A man who is suffering from gonorrhœa is put through a certain course of treatment. As a result the disease is apparently cured, inasmuch as the standard of cure set up by his medical attendant has been attained. In the course of time—and here it is most important to point out that the intervening time may be one of months or of years—the man marries. Between his "cure" and marriage there has been no exposure to a fresh infection. Shortly after marriage he discovers that he is suffering from the old complaint. Now comes the tragedy. He is forced to arrive at a conclusion which he would give all he possesses to forgo. What are his data? He was told that he had been cured of his previous attack, he knows he has been leading an absolutely chaste life. He is now suffering from the same disease. The only conclusion to which he can come (with his limitation of knowledge) is that his wife has lapsed from the paths of virtue and, having contracted the disease herself, has now handed it on to him. Here we see the elements in an inexpressibly sad and terrible domestic drama, all too frequently enacted. The man

forced by apparently irrefutable reasoning to the above conclusion, the wife convinced of her own integrity, no mediator to explain and heal the breach. Apart from pathological results, there follows either a life-long separation with all its attendant temptations and disabilities, or a continuation of a so-called union, which, beginning with a lack of faith and continued in an atmosphere of mutual recrimination, must almost necessarily result in a permanent wreckage of happiness. What is the explanation? It is as simple as it is tragic.

The standard of cure which was originally set up and which had been attained was a superficial one, and therefore imperfect one. The examination on which the verdict of "cured" was based was insufficiently searching to discover the inimical gonococci. In one or both of the vesiculæ seminales these had lingered in apparent quiescence during the months and possibly during the years, only then to break out from their lurking place with renewed virulence on the consummation of marriage. The husband's bridal gift to his wife was, indeed, a terrible one, and the infection which she derived she has handed back (in some cases with interest) to her all unconscious spouse. If at the time of "cure" the contents of the vesicles had been expressed and examined the danger would have been detected and eventually all would have been well.

I need but merely refer to pyosalpinx, sterility, gonococcal rheumatism, and chronic invalidism as other lesions which may accrue from the non-insistence upon the most rigorous test as to cure. It is stated that whereas syphilis constitutes a third of pathology, gonorrhœa is a causal factor in nearly half the total number of cases suffering from diseases peculiar to women. It is surely unnecessary, in the light of such a statement, to debate upon the grave responsibility which presses upon all of us to find out the most stringent standard of cure known to science, and, finding it, to use it.

For information as to the nature of such a standard of cure I must refer my readers to the suggested scheme at the end of this article.

II. The Most Rigorous Standard of Cure Must be Applied to Every Type of Gonococcal Disease.

There is no doubt that an insistence upon utilising the highest standard of cure does obtain amongst certain members of the profession. It is, however, a remarkable fact that a certain proportion of these penultimists fail to carry out their practice to a logical conclusion. These practitioners insist that before a married patient be allowed to resume marital relationship, or a bachelor on the verge be permitted to contract marriage, he should be run through the gamut of urinary, urethral, prostatic, and vesicular examinations.

But what of the bachelor who determines as such to remain? And here is my point: in nearly every instance he is discharged as "cured" after an essentially less stringent test than is insisted upon by our idealists when dealing with the husband actual or potential. Why is the married man or matrimonial candidate so rigorously overhauled? Because he may infect his wife that is or is to be. It is, indeed, a terrible fate for a married woman to develop a pyosalpinx as the result of an infection contracted from her husband. It is surely more terrible if many women contract the same hideous complaint, for without cynicism one must admit that in many instances such will be the result of prematurely discharging as "cured" the amorously flitting bachelor. Whether the suffering woman be a matron of virtue or the mistress of many is possibly beside the point—from the logical purview; from the sociological the latter is undoubtedly the more serious.

A rigorous test is imperative for the married man in order to protect his wife; for the bachelor it is necessary in order to safeguard society. I submit that in every case of gonorrhœa the most rigorous test known should be applied irrespective of the patient's actual or potential matrimonial position and irrespective of the apparent lightness or severity of the disease. If this is not carried out the apparently cured will act as venereal emissaries in the dissemination of disease.

Let us remember that, in urging the necessity of the ideal standard of cure, we are not only making for the reduction of suffering and the prevention of domestic tragedies, but we are working for the repopulation of England. By the prevention of gonorrhœa we prevent a large proportion of that sterility by which countless women are robbed of their potential offspring, and England of innumerable citizens, at a time when we shall need them most.

III. The Standard of Cure should be Systematically Employed.

Amidst the multifarious activities and tensions thrust upon us we have not fully realised the value of the admirable machinery set up by the Local Government Board in the shape of venereal cliniques. I believe that history will show the initiation of such a scheme to be one of the greatest pieces of public health work ever originated.

As a result of this organisation a far-reaching series of statistics, medical and sociological, should be at our disposal. But unless a uniform standard of cure be systematically used the data from various institutions would not be comparable, and it would be impossible to appraise scientifically the value of the various methods of treatment employed. Moreover, a fallacious index of the efficiency of different institutions will originate—for the clinique with a low standard of cure will have many cures to its credit, whilst the one with an ideally stringent standard will have but few. We have blindly worshipped too long and will continue to worship at the shrine of numbers—let us make certain that our numerical basis be a sure one.

Let it not be thought that by suggesting that any particular "standard of cure" should obtain in all clinics I am advocating a policy which might result in a stereotyped conservatism. The standards of to-day are unfortunately in many cases the standards of yesterday, but there is no reason why those of to-morrow should be identical with those of to-day.

Let us, however, be certain that the standard of to-day be the most rigorous one possible. It is easy to assent to such a statement, but difficult to secure that any given standard is the most perfect. The underlying fundamental principle of such a test is that every weapon in the antigonococcal armoury should be utilised in order to dislodge that inimical micro-organism from every conceivable lurking place. From this it follows that every possible lair of a glandular nature should be most thoroughly explored by a searching examination of its expressed secretion.

How are the various standards to be compared? I would tentatively suggest that in one group of clinics a certain standard of cure should be employed, whilst in another group another standard should be initiated. Care should be taken that the nature of the cases and the treatment administered should be as similar as possible. After a given period the number of cases which had been discharged as cured and which had returned for further treatment (a new infection being eliminated) should be compared. The comparison instituted therefrom should give evidence with a fair amount of scientific verity of the validity of the varying standards employed in the two groups of cliniques. In the case of large cliniques such an experimental method could be utilised with still greater advantage.

I fully realise the difficulties which exist in these times of levelling up standards in medicine as in other spheres, but in this instance there is a peculiar necessity, eugenic and economic, incident to the present condition of affairs, which calls for the exercise of every possible endeavour in this direction.

In these days of ubiquitous venery it is for us to know how, and knowing how, to act in such a way as to cripple, if not eventually to destroy, the luxuriant and deadly growth of this particular upas tree in the forest of disease.

SUGGESTED SCHEME AS REGARDS TESTING FOR CURE IN GONORRHŒA.

By Malcolm Simpson and E. R. Townley Clarkson.

In the interest of the public health it is imperative that the most stringent standard of cure should be employed before a patient who has suffered from gonorrhœa is "discharged as cured." If such a practice does not obtain many patients will be set at liberty with a fallacious sense of security. In this way venereal clinics and practitioners will be acting as distributing agencies of disease.

We venture to suggest below a course of procedure to be followed before a patient is discharged. The method is

necessarily a tentative one. It is one which is used in the course of our hospital and private practice. We are aware that many may regard it as unnecessarily rigorous. We hope that with the lapse of time and the ingress of new ideas it may be improved by the introduction of more searching methods, but we must state our belief that the adoption of any standard of a less rigorous nature would be fraught with great individual and therefore sociological dangers.

I. *Males.*

1. Suspend treatment for at least one week. Patient should be advised to take alcohol as a provocative stimulant. If for any reason this should be considered inadvisable, the alcohol may be administered as a non-recognisable constituent of some palatable mixture.

2. Patient to present himself for examination, having if possible refrained from micturition all night, or, at least, from four to six hours. Meatus examined and urethra "milked up" from bulb. The bacteriologist takes meatal drop on platinum loop, film is made, culture-tube is then inoculated. If no meatal drop then platinum loop is to be passed into urethra, and mucous membrane stroked forward, and film made and tube inoculated from wire. Patient micturates first portion of urine into sterilised vessel, which bacteriologist examines in culture media. Centrifugalisation to be carried out or not as seems desirable. Any threads or deposit examined in film and culture. Glans penis is cleansed with soap, and later on with sterilised water, foreskin retracted, and urethra washed out with sterilised water, and patient placed in knee-elbow position; the glans penis is not to be touched; shake out last drop of fluid in urethra. Systematically palpate prostate and vesicles, special attention to be made to any feeling of abnormality—e.g., thickened or occluded vesicles or nodules in prostate. Massage prostate and vesicles till a drop appears at meatus or presents itself after milking urethra forward from the bulb.

N.B.—The drop may be either like white of egg—i.e., slightly opalescent and homogeneous—or in marked cases turbid, yellow, or granular.

Films are then made of the prostatic and vesicular fluid and culture-tubes inoculated.

The glycerine drop is a product of the anterior urethra, and indicates that the prostatic or vesicular secretion has not presented itself at the meatus.

Finally, a urethral examination should be made, preferably by Wyndham Powell's instrument with magnifying eye-piece. The instrument having been passed, the anterior urethra from the bulb forwards is carefully examined in order to ascertain its condition as regards (*a*) hard or soft strictures or infiltrations; (*b*) intra-urethral warts; (*c*) infected follicles; (*d*) any abnormal congenital condition, e.g., angiomata. At the same time the roof and the floor should be carefully palpated over the urethroscope tube in order that any peri-urethral infiltrations present may be discovered.

The glans penis is to be examined for para-urethral follicles, especially in the cases of patients exhibiting a hypospadiac or epispadiac condition. The perineum should be examined with a view to discovering the presence of cowperitis and perineal abscess, &c.

II. *Females.*

Suspend treatment for at least one week. Patient should be advised to take alcohol as a provocative stimulant. If for any reason this should be considered undesirable the alcohol may be administered as a non-recognisable constituent of some palatable mixture. Examine as soon after menstrual period as possible. It is advisable to always wear gloves during examination of females. An abdominal examination should be made with the object of noting any abnormality. The patient should be examined in the dorsal position, leaning back in a urological chair, with the thighs flexed on abdomen and knees supported in crutches. The examiner wears a suitable head lamp.

Method of Examination.

1. Remark presence or absence of discharge, and, if any, note quantity, consistency, and colour.

2. *Vulva.*—Vulva is to be cleansed and Bartholin's glands to be carefully examined; note specially redness around opening of same—squeeze out contents if possible; resultant fluid to be placed by bacteriologist on film or culture-tube.

3. *Urethra.*—The meatus is to be examined for the presence of pus. The floor should be pressed forward by finger in vagina and film should be made and culture-tube inoculated with the secretion expressed. If no drop expressed, platinum wire passed into urethra, and mucous membrane stroked forward, slides should be made and tubes inoculated from wire. Crypts in vestibule around meatus urinarius should be carefully looked for and notice taken as to infection. Small retractor speculum should be introduced and the urethra examined thereby, especially as regards infected Skene's tubules. Patient micturates; culture-tubes to be inoculated; centrifugalisation if deemed necessary.

4. *Vagina.*—A speculum, preferably Cusco's or Ferguson's, is to be introduced and an examination made of the vagina. The cervix is to be exposed and any pathological appearance, such as erosion, polypi, cysts, or ulcer, noticed. If secretion (either the normal ropy mucous secretion or pus) issues from the cervical canal a film is to be made and a culture-tube inoculated. If none is seen, then gentle pressure should be made by means of a blunt sponge-holder forceps in an antero-posterior position so that the contents of the deeper cervical glands may be expressed. A film should be made and a culture-tube inoculated with any secretion so obtained.

5. A bi-manual examination of the uterus and adnexa should be made, so that evidence of any disease may be noted.

The above should be carried out on two occasions at intervals of a month.

Note.—It is advisable that the bacteriologist should be present himself and take his own specimens.

No mention has been made of the place of provocative vaccines and the complement-fixation test in connexion with testing for the presence of gonococci. We realise the potentialities associated with these methods, but we do not at present regard their efficacy as sufficiently proved to justify their inclusion in a routine scheme.

We take this opportunity of thanking Dr. G. T. Western and Dr. P. N. Panton, of the London Hospital, for their advice as to the bacteriological points involved in the foregoing scheme.

A NOTE ON

THE USE OF "ANTIGENS" IN DIAGNOSIS BY THE WASSERMANN REACTION:

THE NECESSITY FOR FURTHER INVESTIGATION.*

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THERE can be no doubt that the adoption of a "standard" antigen would introduce a valuable simplification into the performance of the Wassermann reaction. It is the object of the present note, however, to draw attention to limitations of antigens in common use, which should preclude the adoption of any single one as a standard.

The property which a substance or a mixture must possess in order to be termed a syphilitic antigen is that when mixed with syphilitic serum (heated at 56° C.) in suitable proportion and added to fresh guinea-pig's serum it deprives the latter of its hæmolytic or complementing power; a necessary corollary is that the same amount of "antigen" along with non-syphilitic serum shall be, in comparison, practically devoid of this action on complement.

Stages in Evolution of Syphilitic Antigens.

The following stages may be traced in the evolution of knowledge as to the syphilitic antigen:—

(1) The demonstration that a watery saline extract of certain congenital syphilitic livers possessed this property (Wassermann, Neisser, and Bruck), which has subsequently been found to depend on autolysis rather than on the presence of abundant spirochætes.

(2) The proof that alcoholic extracts of normal tissues also yielded a syphilitic antigen (Levaditi and Yamanouchi, Porges and Meier, &c.). As commonly used, such extracts contain alcohol, which is by no means a negligible factor in the production of the antigenic effect.

(3) The demonstration that the property resides to a considerable extent in the ether-soluble, acetone-insoluble fraction of such alcoholic extracts (Noguchi), even granting that, as McLean states, the antigen is not "lecithin," but something which is precipitated along with it.

(4) The observation (Browning, Cruickshank, and Mackenzie [4]) as to the enhancement of antigenic power conferred on such lipoid mixtures by the addition of cholesterol; also the evidence subsequently afforded that crude alcoholic extracts could be enhanced in a similar fashion (Sachs).

* A Report to the Medical Research Committee.

The question as to which is the "*best*" antigen has received attention since an early period of such investigations. For practical purposes it is desirable that the quantitative difference between a negative and a positive serum, as measured by the excess of the amount of complement which the serum-antigen mixture will inactivate in the latter as compared with the former case, should be as great as possible, since this is the only index of positiveness which exists. Accordingly, extracts of a variety of more or less normal organs have been examined and it has been found in general that alcoholic heart extracts possess this property to an outstanding degree; thus human heart extract has been recommended by Michaelis and has been employed as syphilitic antigen for routine purposes by Thomsen and Boas,[1] and a similar extract, with the addition of cholesterol, has been recommended by Fildes and McIntosh,[5 7] who are supported by Walker and Swift.[9]

Browning, Cruickshank, and Gilmour,[3] in their examination of the ether-soluble, acetone-insoluble fractions of various animal tissues, found that the heart "lipoids" (from the ox) constituted a more potent antigen than similar products derived from ox-liver and kidney and egg-yolk, but they observed that ox-heart lipoid plus cholesterol, when mixed with certain normal sera (one being that of a laboratory worker who habitually used his own serum as negative control), led to a very great inactivation of complement, which was not attended by a particularly high anticomplementary property of the lipoid mixture by itself. Thus they did not feel justified in adopting it for purposes of diagnosis. They therefore continued to use liver lipoid in the full knowledge that the liver-lecithin plus cholesterol, as compared with certain other antigens, caused less complement fixation along with most syphilitic sera.[3] This deficiency was, however, considered to be compensated for, to a great extent, by the fact that when using the liver lipoid in parallel series with lipoid plus cholesterol, if a serum caused more complement to be inactivated in the cholesterol series than in the series without cholesterol, this was an indication of its syphilitic character and could be utilised in the diagnosis of weakly reacting sera.

Heart Extract plus Cholesterol Antigen.

The tendency of crude heart extracts plus cholesterol to cause a considerable amount of complement fixation with non-syphilitic sera has been recorded by a number of observers, especially in America (e.g., Bronfenbrenner and Schlesinger,[4] Smith and McNeal[8]). On the other hand, the use of such an antigen, as first advocated by McIntosh and Fildes, has found much favour and neither these workers nor certain others have found non-specific effects, which doubtless depends on the criteria of a positive result which they have adopted. The popularity of this antigen is evident from the fact that of the four methods of performing the test recommended in the Interim Report on the Wassermann Test of the Special Committee upon the Standardisation of Pathological Methods of the Medical Research Committee,[5] three employ this antigen and it is stated that (p. 37)—

"Antigen or Extract.—Of the various extracts which have been recommended at one time or another, that prepared from heart and reinforced with cholesterol, as recommended by McIntosh and Fildes, will be found simple to prepare and as satisfactory as any in use at the present moment."

The evidence as to the pre-eminent value of this antigen appears to rest on the extensive tests carried out by Fildes and McIntosh[7] which led them to the following conclusion, which is also quoted in the Interim Report by Harrison:—

"Since no antigen gave a positive reaction in any case in which heart-cholesterin gave a negative, the results have been tabulated as comparisons between heart-cholesterin and the other antigens."

Liver-lecithin plus Cholesterol Antigen.

This, however, ceases to be the case when the liver-lecithin plus cholesterol antigen is used under optimum conditions (see Table). McIntosh and Fildes instituted a comparison between heart-extract, heart-extract plus cholesterol, Wassermann-Meier's fœtal syphilitic liver antigen, and the liver-lecithin plus cholesterol antigen of Browning, Cruickshank, and Mackenzie. It is important to note, however, that as regards the liver-lecithin plus cholesterol antigen, these observers, actuated by theoretical considerations, employed it in a dilution (1 : 20) much exceeding the optimum which was recommended by the original workers (viz., 1 : 8). Hence what McIntosh and Fildes really determined was the unsuitability of this antigen when employed under the conditions which they adopted, and not the inferiority of the method including the use of liver-lecithin plus cholesterol as originally put forward. Walker and Swift,[9] from their results, consider that the antigenic property of cholesterol-heart-extracts is especially evident when testing sera from late (treated) cases of syphilis.

Results of Investigation by Authors.

Recently we have carried out a series of parallel tests, employing liver-lecithin plus cholesterol, according to the usual method (Medical Research Committee's Interim Report on the Wassermann Test, p. 27), and also McIntosh and Fildes's heart-extract plus cholesterol under the precise conditions laid down by these workers as regards dilution and volume of antigen and amount of patient's serum. We have always used varying amounts of complement in both series so as to obtain a quantitative estimate of the complement fixation. The results, while confirming our earlier observation that the liver-lecithin plus cholesterol antigen with *many* positive sera gives a smaller amount of complement fixation than do certain other antigens, e.g., heart-cholesterol, have also shown that *with a proportion of sera which is by no means negligible (nearly 6 per cent.), the liver-lecithin-cholesterol antigen leads to greater complement fixation than does the heart-cholesterol antigen.*† (See Table.)

Table showing Results with the Two Antigens.

Heart-cholesterol.	Liver-lecithin-cholesterol.	Number of sera.	Result.
+	+	125	Agreement in 83 per cent.
−	−	165	
?	?	9	
+	− or ?	15 = 4·2%	Difference of result in 17 per cent.
?	−	1 = 0·28%	
− or ?	+	21 = 5·8%	
−	?	24 = 6·6%	
	Total	360	

We have examined several such sera repeatedly with different specimens of complement and with three different liver products (Thomson, Skinner, and Hamilton's batches iii., vi., and vii.), so that the result may be accepted as of general application. Thus certain sera will be recorded as positive with liver-lecithin plus cholesterol and not with heart-cholesterol, while other sera will be more positive with the latter antigen.

A further point which it is of importance to bear in mind in connexion with further work on antigens, is that not merely may one antigen differ from another as regards optimum concentration, but also that the amount of serum necessary to elicit the maximum complement fixation may vary. Thus, with the heart-cholesterol antigen reduction in the amount of serum, recommended by McIntosh and Fildes, leads to a striking reduction in the amount of complement fixation, whereas a similar reduction does not lead to this effect when liver lecithin-cholesterol is used as antigen.

These results have led us to adopt the following procedure in conducting routine Wassermann tests. For each serum two series of three tubes each are set up: (*a*) containing liver lecithin-cholesterol (1 : 8 turbid emulsion) 0·3 c.cm. plus 0·025 c.cm. patient's heated serum; and (*b*) heart extract plus cholesterol (1 : 30 rapidly mixed emulsion) 0·5 c.cm. plus 0·05 patient's heated serum, along with increasing amounts of complement in each series. Thus the procedure is practically the same as that described by us in the Medical Research Committee's Report except that the heart extract plus cholesterol is substituted for the emulsion of lecithin alone.

We would strongly urge that the uncertainty which at present exists with regard to the significance of the behaviour of certain sera can be best cleared up by a collective investigation concentrated on such cases, and that three classes of material are required: (1) cases of syphilis known to have reacted positively, in which the reaction is becoming extinguished as the result of treatment; (2) untreated cases

† Case 7—see Medical Research Committee's Special Report, Series No. 21—(penile chancre supposedly of 18 days' duration) which reacted positively with liver-lecithin plus cholesterol, but was "practically negative" when tested with heart-cholesterol, illustrates this very well.

of congenital syphilis in which other children of the family or the mother are definitely positive; and (3) cases in which, although there is no clinical suspicion of syphilis, suspicious or positive reactions have been obtained. An extensive selection of negative controls is also highly desirable; these might best be obtained voluntarily from among laboratory workers.

Conclusion.

In the absence of an ideal antigen the present results indicate that a proportion of weak positive reactions will be missed if only a single antigen be employed in performing the Wassermann test. Hence it is advisable always to use *both* antigens. Since all laboratory tests are productive of the most valuable results when the clinician and the laboratory worker collaborate intimately, the desirable procedure would appear to be that, where tests are performed with only one antigen, all sera should be preserved (e.g., by freezing), so that if a positive reaction fails to be obtained in cases which are clinically suspicious, the test may be repeated with the other antigen. Of course, when the reaction is being tested for the control of treatment both antigens should be employed.

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THE RELATIVE CONTENT OF
ANTISCORBUTIC PRINCIPLE IN LIMES* AND LEMONS,†

TOGETHER WITH SOME NEW FACTS AND SOME OLD OBSERVATIONS CONCERNING THE VALUE OF "LIME JUICE" IN THE PREVENTION OF SCURVY.

A.—*EXPERIMENTAL INQUIRY*,
BY HARRIETTE CHICK, E. MARGARET HUME, AND RUTH F. SKELTON.

B.—*HISTORICAL INQUIRY*,
BY ALICE HENDERSON SMITH.

(*From the Lister Institute, Director's Department.*)

Introduction.

A BELIEF in the antiscorbutic virtue of the preserved juice of the West Indian lime has long been cherished by the public. Such a faith is, however, not universally shared by those having experience, in recent years, of the value of lime juice for prevention or cure of scurvy. This scepticism is first found in the writings of the Arctic explorers at the end of the nineteenth century (see Jackson and Harley, THE LANCET, April 28th, 1900). It has also been expressed recently by many observers who, confronted with scurvy in one or other of the recent theatres of war, have declared that they found lime juice of no avail as a prophylactic or therapeutic agent. Nevertheless, the literature[1] upon this subject appearing in the eighteenth and early nineteenth century is full of the praises of "lime juice," and there appears to be every reason for believing that the use of so-called lime juice was responsible for the disappearance of scurvy from the British Navy in the first decade of the nineteenth century. The naval records of the period have been carefully searched and the result of the inquiry forms the subject of the second section of this paper. A sufficient explanation of the anomaly will be found to lie in the fact that at this early date the term "lime juice" included the juice of lemons from the Mediterranean, whereas for the last 50 or 60 years it has been applied to the preserved juice of the West Indian lime.

A.—*Experimental Inquiry.*

A study of lime juice has formed an important item in a comprehensive investigation of the antiscorbutic properties of various foodstuffs which has been carried out by a group of workers in this institute during the past two years.[2] This inquiry has confirmed and extended the researches of Holst and his co-workers,[3] published in 1912. Scurvy, in accordance with the view of ancient tradition, has been shown to be a deficiency disease, occasioned by absence in the diet of an unknown accessory food factor, or "vitamine." This factor is present in living vegetable and animal tissues, in largest amount in fresh fruits and green vegetables, to a less extent in root vegetables and tubers. It is present in small amount in fresh meat and milk, and has not been detected in yeast, fats, cereals, pulses. The antiscurvy food factor is sensitive to high temperatures and suffers destruction when the living tissues in connexion with which it is produced are disorganised by drying and other methods of preservation. The expressed juices of fresh vegetables rapidly become impotent in respect of antiscorbutic properties, but Holst and Fröhlich (1912) detected a distinctly greater stability in this respect in the expressed juices of acid fruits.

Experimental.

In studying the distribution of the antiscurvy vitamine among the various foodstuffs the general aim of the experimental work has been to assign to each a definite quantitative value in respect of its antiscorbutic properties. The work has been done mainly with guinea-pigs, though later confirmatory experiments have been made with monkeys.

Young, growing guinea-pigs, 300–350 g. in weight, were selected for the work. If all greenstuff is removed from the diet, and they are nourished on grain (oats and bran) alone, symptoms of scurvy appear after 10–20 days and death takes place in about 30 days. If, in addition, they receive a daily ration (60 c.cm.) of milk, heated at 120° C. for one hour to reduce its original antiscurvy value to a minimum, the general condition of the animal is much improved and growth is maintained for 15–20 days; the onset of scurvy is not, however, materially influenced and death takes place after 30–40 days. (See Chick, Hume, and Skelton, 1918.[4]) The value of fruit juices and their preparations was estimated by adding them in various amounts to this "scurvy diet" of oats, bran, and autoclaved milk, and determining the minimum daily ration required to maintain the animal in health and prevent occurrence of scurvy for a period of 90 days. At the end of this period the animals were killed with chloroform and careful post-mortem examinations were made, followed by histological study of the bony tissues.

There is evidence that the guinea-pig is more susceptible to scurvy than many other mammals, including both monkey and man, and needs a greater proportion of antiscorbutic food in its diet to obtain adequate protection from the disease. But there is every reason to believe that the *relative value* of different foods, as determined experimentally by this means, will remain the same for all, and the results obtained with guinea-pigs have found abundant confirmation in the available historical records of the worth of human diets from the standpoint of antiscurvy value.

Preserved lime juice.—Four samples which had been supplied for official use were placed at our disposal at different times by the authorities. Two were the purified juice of West Indian limes preserved with rum (14 per cent.), one contained no preservative, and the fourth was a sample of Bombay lime juice, preserved with salicylic acid and alcohol. To our great surprise we were unable to detect any significant protection in a daily ration of from 5 to 10 c.cm., which was as large a dose as could be tolerated. It was possible that the age of the samples might be responsible for their inefficiency. The process of "purification" consisted of a lengthy sedimentation and a separation of all pulpy matter expressed from the ripe fruit; this alone involves several months, a fact which, when added to the length of time taken in transport, &c., renders it likely that this lime juice, when consumed, may be many months, even years, old.

Crude lime juice.—Accordingly a series of samples of crude juice were examined; the samples were cloudy and contained a considerable proportion of oily and pulpy matter. They were of various age, but some, at least, were fairly fresh and were examined immediately on their arrival in this country. In two samples only was any antiscorbutic value detected, and in these instances partial protection only was conferred by a daily ration of 5 c.cm.

Fresh lime juice.—In order to eliminate the question of age and to obtain a satisfactory basis for comparison we

* *Citrus medica*, var. *acida*. † *Citrus medica*, var. *limonum*.

investigated the juice of the fresh fruit expressed in the laboratory. This we were enabled to do through the kindness and generosity of Messrs. L. Rose and Co., who supplied us with regular monthly supplies of fresh fruit, specially imported for the purpose. The fresh, ripe fruit‡ was cut in half and the juice pressed out by hand upon an ordinary glass lemon-squeezer, there was little admixture of rind products. It was used as fresh as possible, being kept in a refrigerator. On the arrival of the next consignment of fruit the remainder was rejected and the fresher juice employed; the expressed juice was never more than two months old when administered. Protection from scurvy was obtained with a daily ration of 10 c.cm.; with doses of 5 c.cm. and 2·5 c.cm. a definite degree of protection was manifested, but it was neither constant nor complete. The details of the above results are all summarised in Table I.

TABLE I.—*Antiscorbutic Value of Lime (Citrus Medica, var. Acida) Juice and Lemon (Citrus Medica, var. Limonum) Juice.*

Experiments with guinea-pigs.—Cabbage was removed from the normal diet of oats, bran, and greenstuff and replaced by the fruit juices investigated. A daily ration of 60 c.cm. cow's milk (heated to 120° C. for one hour to destroy anti-scurvy properties) was added to improve the nutritive value of the diet.

Antiscorbutic material.	Dose c.cm. daily.	Age of juice (months).	Preservative.	Result.	Degree of protection against scurvy.
LIME JUICE.					
Preserved.					
1. Army sample, Nov., 1916.	5	Uk.	Rum, 14%	Animals died of scurvy.	0
2. Navy sample, March, 1917.	5	,,	Rum, 14%	,,	0
2A. Navy sample, March, 1917.*	10	,,	0	,,	0
3. Bombay samples (Wilcox brand), Oct., 1917.	5	2 to 4	Alcohol and sal. acid.	,,	0
Crude.					
1. From Lewis and Peat, Feb., 1917.	5	Uk.	None.	Animals died of scurvy.	0
2. From A. Riddle and Sons, April, 1917.	5	About 14	,,	,,	0
3. From L. Rose and Co., May, 1917.	5	6 to 7	,,	Some protection in 2 cases out of 4.	+
4. From L. Rose and Co., Sept., 1917.	5	3 to 6	,,	Scurvy, but considerable degree of protection.	++
5. Bombay crude juice, Oct., 1917.	5	2 to 4	,,	Animals died of scurvy.	0
5A. Bombay crude juice, Oct., 1917.	10	4 to 5	,,	,,	0
Fresh juice.†	2·5	0 to 2	,,	Scurvy in all cases, but some protection.	+
	5	0 to 2	,,	Scurvy in 4 cases out of 6.	++
	10	0 to 2	,,	No scurvy.	+++
LEMON JUICE. *Fresh juice.*	0·5	0 to 2	None.	Scurvy in all cases, but definite protection.	+
	1·5	0 to 2	,,	Protection almost complete in 2 cases out of 4.	++
	2·5	0 to 3	,,	No scurvy.	+++
FRESH RAW CABBAGE LEAVES.	Grm. 0·5	Fresh	—	Scurvy symptoms, but definite protection.	+
	1·5	,,	—	Protection.	+++
	2·5	,,	—	,,	+++

* Without addition of rum.

† Limes imported monthly from Dominica, squeezed in laboratory, and preserved in refrigerator.

Uk., Unknown. Sal. acid., Salicylic acid.

+++ = Complete. ++ = Definite. + = Slight. 0 = No protection.

‡ These limes were about 4 to 8 weeks in transit owing to war conditions of transport, and it has been suggested to us that this duration of time may have influenced the condition of the fruit unfavourably. We hope in the future to investigate the juice of limes only 2 to 3 weeks old, in order to see if the minimal protective dose for guinea pigs may not be lowered a little with juice obtained from fresher samples of fruit. It is unlikely that any significant alteration in the anti-scorbutic value of the juice will be obtained, as all the fruit employed in the above experiments appeared to be in sound condition. Nevertheless, the point seemed to merit investigation.

Fresh and preserved lemon juice.—Fresh lemon juice was found to be much more potent in respect of antiscorbutic properties. Marked degree of protection was discovered by a daily ration of only 0·5 c.cm., and this was almost complete in some cases with a dose of 1·5 c.cm. With a daily ration of 2·5 c.cm. complete protection from scurvy was attained. The value of fresh lemon juice was therefore estimated at about four times that of fresh lime juice. The lemon juice was roughly of the same age as the lime juice in the above experiment. The lemons were squeezed in the laboratory, the juice was kept in a refrigerator, and its age varied from a few days to two months.

Our experiments with preserved lemon juice are still incomplete, but it appears probable that preservation with sulphite will prove satisfactory in retaining a considerable measure of the original antiscorbutic value. One sample of imported lemon juice from Messina, kindly provided by Messrs. L. Rose and Co., was found to afford distinct protection from scurvy in a daily dose of 5 c.cm. when at least 7 months old.

Experiments with Monkeys.

The question was of sufficient importance to warrant a series of experiments with another experimental animal, and young growing monkeys were selected. After observation for a month or more, to be assured that they were in normal satisfactory health, they were placed upon a generous diet, consisting of various cereal foods with nuts and abundant autoclaved milk, the antiscorbutic element being provided solely by the ration of fresh fruit juice provided. In case of limes the whole fruit was minced in order to include all constituents and the resulting mass squeezed in strong muslin of coarse mesh, yielding a somewhat thick liquid containing pulpy and oily matter. This was done immediately after delivery and at the same time, fresh lemons were procured and their juice expressed. Both supplies were kept in a refrigerator room, until the arrival of the next consignment of limes, when a fresh supply of lemon juice was also prepared. It was thus arranged that the lime and lemon juice used in the experiments (detailed in Table II.) should be comparable as far as possible.

TABLE II.

Experiments with monkeys.—The diet consisted of wheaten biscuit, peanuts, boiled rice, wheat germ, and autoclaved milk (120° C. for one hour) *ad libitum*. The antiscurvy food factor was provided only by the ration of fresh fruit juice.

	Fresh Lime Juice.				*Fresh Lemon Juice.*			
Exp. No.	Average daily ration.	Initial weight.	Duration of diet.	Exp. No.	Average daily ration.	Initial weight.	Duration of diet.
	c.cm.	g.	days.		c.cm.	g.	days
1	10	2340	35	8	10	1660	93
2	10	2010	91	9	10	3130	92
3	10	3500	54	10	5	1900	49
4	5	3650	115	11	5	3500	171
5	3·5	2620	120	12	5	1750	66
6	2·5	1910	101	13	2·5	2010	122
7	2·5	2010	168	14	2·5	2030	123

Results of Experiments in Table II.

Fresh Lime Juice.

1. Good health, until sudden death from acute, undiagnosed illness.
2. Poor health, no symptoms of scurvy, death due to dysentery. P.M. no macroscopic signs of scurvy, histological evidence of slight scurvy.
3. Good health.
4. Acute scurvy, symptoms first noticed 49th day; cured with daily dose of 5 c.cm. lemon juice, beginning 115th day.
5. Scurvy, symptoms first noticed 45th day.
6. Incipient scurvy. Death from dysentery complicated by a worm infection of large intestine. P.M. definite signs of slight scurvy, hæmorrhage in synovial membrane, incipient periosteal hæmorrhage, deformity of rib-junctions.
7. Slow chronic scurvy, complicated with intestinal worm infection.

Fresh Lemon Juice.

8 to 14. Good health.

The fruit juice was, as a rule, acceptable to the monkeys, and the necessary ration, diluted with water and sweetened with sugar, was readily sucked from the nozzle of a syringe. This was not always the case with lime juice: the animals sometimes grew tired of it, and some coaxing was necessary in order to get the ration successfully administered.

The experiments are set forth in Table II., and the results may be summarised as follows: with young, growing monkeys, of 2000–3500 g. weight, daily rations varying from 2·5 c.cm.–10 c.cm. lemon juice never failed to prevent scurvy over periods of time as long as 4 to 7 months. The animals were in excellent health and spirits, and grew in a normal manner.

In case of lime juice the result was otherwise, and the general health of the animals was distinctly inferior. In one case a ration of 10 c.cm. lime juice daily afforded protection from symptoms of scurvy for as long as three months. At the end of this time, however, the animal died of dysentery, and a histological examination of the bony tissues revealed some degree of abnormality. In Experiments 4–7, where the daily ration was 5 c.cm. to 2·5 c.cm., scurvy to a more or less severe degree ensued in every case. Most of these experiments are still in progress.

Experiment 4 is of particular interest. In this case very severe scurvy developed, accompanied by progressive loss in weight. The lower limbs became helpless, wrists and ankles were swollen and tender, the teeth became loose, the gums spongy and hæmorrhagic, and there were distinct follicular hæmorrhages on the face at the base of the whiskers. Finally, blood was passed in the stools and death appeared to be imminent. The lime-juice ration was changed to an equal ration of lemon juice of equal age. In 7–14 days the teeth became firm; gradually all tenderness vanished in the limbs; the animal regained activity and improved in weight. The cure was slow, but the curative dose of lemon juice was small in comparison with the severity of the case.

The relative value of these two fruit juices, deduced from the trials with monkeys, is therefore in accord with that obtained in the experiments with guinea-pigs—i.e., *the value of fresh lemon juice is approximately four times that of fresh lime juice.*

In conclusion, our best thanks are due to Messrs. L. Rose and Co. for generously providing us with a regular supply of fresh lime fruit from Dominica, in spite of the difficulties of transport, &c., occasioned by war-time conditions. We desire also to record our appreciation of their willing coöperation in supplying numerous special samples of crude and preserved juices, and for the accurate and detailed records made on our behalf of the methods used in their preparation. Without this assistance the above research would have been impossible.

B.—*Historical Inquiry*, by ALICE HENDERSON SMITH.

The lime juice now issued to the Navy and Army for their use as a preventive of scurvy is the juice of the sour lime (*Citrus medica*, var. *acida*) grown in the West Indies. To it has long pertained the reputation made in the Navy 125 years ago by the "lime juice" used then. But that "lime juice" was not the juice of the sour lime.

The citrous fruits first used by the Navy came from the Mediterranean, largely from Spain. They did not include the *sour* lime, which is not grown in Europe; they did probably include the *sweet* lime (*Citrus medica*, var. *limetta*), but consisted principally of lemons (*Citrus medica*, var. *limonum*). In 1796 the war cut off Spain as a source of supplies and lemons were brought from Lisbon; the supply was uncertain, insufficient, and very expensive until 1803, when contracts were first made through the naval representative at Malta. Thereafter, for many years, an annual contract secured an ample quantity of the juice of lemons grown in Malta and Sicily. This enabled the Admiralty to employ "lime juice" much more widely than had been done before, and for some years the issue was a general one and not confined, as before, to the sick and to the crews of ships on foreign service. Together with the improvement in victualling and in the general conditions of living on board ships of war this was successful in expelling scurvy from the Navy in the course of a very few years, and by 1810 the records of scurvy cease. From that time the disease has occurred only in isolated and exceptional cases.

Before the middle of the nineteenth century complaints were made about the quality of the lemon juice sent from Malta, but by that time opportunities for the trial of it therapeutically were rare in the ordinary service of the Navy. On the return of Sir James Ross from the Arctic regions in 1849, however, it was shown what disastrous results might follow from a deficiency in the supply. In order that other ships then about to leave England on Arctic service should be assured of a reliable protection from diseases the Medical Director-General caused lemons to be squeezed at Deptford for them, and this provision proved fully adequate. Arrangements were made for the careful supervision thenceforward of all lemon juice bought in Malta.

About 17 years later, when the development of the lime cultivation in the West Indies made available a quantity of lime juice, the Admiralty transferred its contracts, and thereafter issued the juice of limes instead of that of lemons. The essential inferiority of limes to lemons in antiscorbutic power was not suspected, and the new supply was believed to be far better than the old. It was produced by English firms under such conditions as would secure its soundness and purity.

Polar exploration again provided the test of its value; and by comparing the experience of the ships provided with the pure lemon juice in 1850 with that of the first Arctic expedition that took out West Indian lime juice we get a very satisfactory human experiment, demonstrating the relative value of the two fruits. The setting of the comparison is made more precise than is generally to be looked for in historical evidence by the following facts.

The lemon juice for the 1850 expedition was prepared at Deptford, and much attention was paid to the best method of preserving it and for obtaining its maximum value when consumed at sea. The juice was issued to the ships under regulations which insured accuracy and definiteness in the quantity consumed by each member of the crew. The daily ration, 1 oz., was issued to each man individually, and drunk by him in the presence of an officer. In 1875, when Sir George Nares's ships, the *Alert* and the *Discovery*, sailed to discover the North Pole, Sir Alexander Armstrong, who had been medical officer on the *Investigator*, was Medical Director-General of the Navy. So satisfied had he been with the results of lemon juice during the voyage of the *Investigator* that he gave directions that the juice should be issued in precisely the same way on the *Alert* and the *Discovery* as on the previous expedition, that is, in the same quantities, and with the same safeguards against any variation in the consumption of it. But the juice issued to Nares's ships was the "lime juice" from the West Indies.

The two expeditions were so near to one another in time that the general conditions of diet, &c., were very similar; but the later one did enjoy certain improvements of diet suggested by accumulated experience, including double vegetable and fruit rations, additional meat, sugar, &c., and a reduction in the amount of alcohol allowed. In casual supplies of fresh game and herbs there was no outstanding difference. Indeed, every detail of the conditions is very nicely adjusted for the comparison, any difference there was being in favour of the lime juice ships.

And the result was not only clear, but emphatic. Nares's ships, supplied with West Indian lime juice, went out in May, 1875; they had their first case of scurvy in January, 1876. Premonitory scorbutic symptoms showed themselves in a further number of the crews in early spring, but they were not recognised, as scurvy was never thought of as a possible danger. With the starting of the sledge expeditions early in April, 1876, scurvy developed with great severity in the sledge crews and three deaths occurred; concurrently there was a development, only less serious, among the men who remained on the ships. The expedition came home to England in October, 1876.

On the other hand, the *Investigator*, supplied with lemon juice, left England in January, 1850, and got into the ice during the following summer. Throughout the next winter and the spring sledging she had no scurvy. In autumn, 1851, her rations were reduced to two-thirds and her lemon-juice ration was halved, and she still had no scurvy through the following winter and spring. Only in May, 1852, her first case developed, 27 months after leaving home and after seven months of short rations and reduced lemon juice. Other 15 months passed before her crew were rescued, and in that whole period of three and a half years she had three deaths from scurvy, the same number that occurred on Nares's ships within one year.

The conclusion suggested by the history of this long immunity from scurvy during the voyage of the *Investigator* is supported by the history of other ships of her time, while the failure of the lime-juice ration to prevent scurvy on the *Alert* and the *Discovery* is repeated in later cases where it

has been relied on as a protection. In the absence of any other satisfactory explanation of the contrast afforded by the experience of these two expeditions—and the prolonged examinations of the Scurvy Commission of 1877[5] discovered none—*it must be accepted as a very convincing piece of evidence that lemon juice is far more effective than lime juice in the prevention of scurvy. It fully confirms the results of the laboratory experiments which have determined more exactly their relative value for this purpose.*

Summary.

1. The antiscorbutic value of the juice of fresh limes (*Citrus medica*, var. *acida*) has been compared experimentally with that of fresh lemons (*Citrus medica*, var. *limonum*) and has been found to be distinctly inferior. Volume for volume fresh lime juice possesses a potency of about one-fourth that of lemon juice. In one instance severe scurvy developing in a monkey on a diet containing a small daily ration (5 c.cm.) of fresh lime juice was cured by an equal ration of fresh lemon juice.

2. Preserved lime juice was found useless for the prevention of scurvy by the method employed. Experiments with preserved lemon juice are still in progress, but give promise of better results.

3. The experimental results are fully confirmed by a historical study of "lime juice" in connexion with human scurvy. At the period when scurvy was eliminated from the British Navy by its agency the term was used to express the juice of lemons, and it was not until the second half of the nineteenth century that the juice of West Indian limes was adopted in the Navy and Mercantile Marine. The history of two Arctic expeditions, that of the *Investigator*, 1850, and that of the *Alert* and *Discovery*, 1875, has been carefully investigated. The former, supplied with lemon juice, experienced remarkable immunity from scurvy during the first two years of great difficulty and privation; the latter, supplied with lime juice, suffered severely from scurvy at the end of the first winter spent in the Arctic regions.

It should be noted in connexion with these facts that scurvy is a disease with a long period of development. As much as four to eight months upon a defective diet may elapse before definite symptoms of scurvy can be observed.

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A CASE OF REPEATED CESSATION OF THE HEART BEAT.

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ARREST of the heart for so long as 30 seconds is very uncommon; we have only been able to find an account of one case in which the heart stopped repeatedly.[1] The notes of our case are given below.

The patient, a man, aged 67, was seen by us on March 27th, 1918. He had been healthy all his life; had recently been excited over the war. He had been in the habit of taking plenty of exercise, bicycling up hills, &c. Just before his illness he was carrying some heavy portfolios about the house. No history of specific disease. On March 13th he complained of giddy attacks. His pulse was noticed on one occasion to be 30. He stayed in bed two or three days, but then he got up feeling quite well, but stayed upstairs. During this time he was having two or three short fainting attacks each day. On March 25th, at 2.30 P.M., he began having repeated fainting attacks till 4.30 P.M. The attacks began again at 5.30 and lasted till 7.30. He then got some sleep, but the attacks began again at 10 P.M. and lasted nearly without intermission till his death in the afternoon of March 28th. During the fainting attacks the heart stopped beating.

Clinical features of the attacks.—Between the attacks the patient was sitting up in bed talking perfectly normally. The pulse was bounding; radial artery palpable, but not calcified. On one occasion the pulse-rate was counted at 84 per minute, soon after it had recommenced beating after an attack. It remained at this rate for about 50 or 60 seconds and then it gradually became slower, the rate falling to about 60 or slightly less, the strength being fully maintained. In 86 seconds from the start the pulse suddenly stopped. Immediately the patient grew pale and there was slight cyanosis. The patient went on talking for 2 or 3 seconds, but then fell back on to his right side with a groan. In 5 to 7 seconds consciousness had certainly been lost, but it was impossible to be certain exactly how much earlier this had occurred. Loss of consciousness was followed by contractions of various muscles, and there were involuntary movements of the limbs.

Breathing became gradually deeper and more convulsive, all the accessory muscles of respiration being brought into play. After about 20 seconds the respiration was at the rate of 44 per minute and was extremely deep. This rapid deep breathing was the most noticeable thing about the case at this period. It was more marked than we have either of us ever observed in other pathological conditions. It can only be compared with the convulsive panting which occurs in the severest kind of muscular work. The patient's face was livid and pale. There was no corneal reflex or light reflex.

After 39 seconds, during which no pulse had been felt at all, it suddenly started again, at first rather weakly, but in 5 or 10 seconds it had regained its normal strength, the rate being sometimes over 80 and sometimes between 75 and 80. Within two or three beats the face flushed bright red, and beads of sweat were visible, the conjunctivæ were congested, and there was excess of lacrymal secretion, and very soon afterwards consciousness was completely restored.

The total length of the cycle was on this occasion 125 seconds. On other occasions it was 115 seconds. Roughly it may be said that during every two minutes the pulse completely stopped for 40 seconds. This sequence of events continued with regularity all the time we were examining the case, some 45 minutes.

There was no obvious abnormality about the heart.

The patient was emphysematous and the apex beat barely palpable. There were no murmurs. When the pulse stopped no beat of the heart was audible with the stethoscope; nor was there any sound suggestive of auricular beats. No venous pulsation in the neck was observed. It was unfortunate that no polygraph tracing could be obtained in this case.

Various attempts were made to interrupt the events of the cycle. The patient was told to take some deep forced breaths during the conscious period, but without effect. He then breathed backwards and forwards through a piece of hose pipe, so as to increase the dead space and increase the CO_2 content of the lungs which might stimulate the heart; but again there was no effect. Firm pressure was exerted on the vagi in the neck, smelling salts were applied to the nostrils while the patient was unconscious but without effect. Sal volatile diluted with an equal volume of water was administered by the mouth. Vomiting was produced and the attacks ceased for about 20 minutes, but then they recurred. He died with signs of cardiac failure.

Post-mortem.—Lungs: Congested and œdematous. *Aorta:* Atheroma, particularly in descending thoracic part. *Heart:* Hypertrophy of both left and right ventricles; they contained rather more blood clot than usual. The heart muscle was rather mottled, but did not look very unhealthy; some moderate degree of fibrosis was suspected. The coronary arteries were atheromatous but patent. The aortic and mitral valves were slightly thickened.

Brain.—The vertebral, basilar, internal carotid, and cerebral arteries were all very atheromatous. The brain substance looked healthy.

The abdominal viscera were not examined.

Dr. P. P. Laidlaw very kindly examined some microscopic sections for us.

Sections of the medulla were cut at the middle and upper part of the vagus nucleus. Numerous small hæmorrhages were found throughout the sections, but they were more striking in the immediate neighbourhood of the vagus nucleus. One in particular involved the nucleus itself, but had not destroyed the nerve cells at this point. The vagus nerve cells showed very poor Nissl bodies and the nucleus was occasionally excentric. A few of the cells were vacuolated. The cells form a very great contrast to those of the hypoglossal nucleus alongside. It is doubtful, however, if the appearances indicate a nuclear lesion, since the apparent chromatolysis and the position of the nucleus are both conditions so frequently found in the vagus nucleus that they can be termed normal post-mortem appearances. The vacuolation is, however, abnormal.

Since the hæmorrhages are numerous it is suggested that they are secondary to the repeated asphyxial periods which occurred before death and are not primary. It is impossible to be certain on this point. The arteries at the base of the medulla showed a little atheroma, but this did not appear very advanced, and the smaller vessels appeared normal.

Sections were also taken at regular distances over the lower part of the medulla. No abnormality was seen, and there was no appearance seen similar to those in Neubürger and Edinger's case.

Sections of the vagus nerve trunk did not show any sign of degeneration or any cellular infiltration suggestive of neuritis.

Sections of the heart muscle which were cut failed to show the auriculo-ventricular bundle. It is thus impossible to say whether this was normal or not. The heart muscle showed a little fibrosis at the upper part of the interventricular septum. The largest artery in this region showed considerable fibrosis of the muscle and also some intimal overgrowth.

[1] Neubürger and Edinger: Berl. klin. Woch. (1893), xxxv., p. 69, 100.

Discussion.

The case published by Neubürger and Edinger was as follows:—

The patient was a man of 48, who had attacks of unconsciousness which came on after straining at stool. The attacks were of short duration and often repeated. Later on, the free intervals became shorter. The pulse was counted at 12 to 16 for some minutes and it became slower before stopping altogether. On restarting the pulse was more rapid to begin with. The sequence of events was compared with stimulation of the vagus in animals. The post-mortem disclosed congenital absence of the right cerebellar lobe. The myocardium was healthy. The vessels in the neighbourhood of the accessory fibres on one side of the medulla were dilated and varicose. These fibres, according to Heidenhain, probably contain the inhibitory fibres to the heart.

In the present case the fact that no venous pulsation was noticed in the neck, and that there was complete silence on auscultation of the præcordium, suggests that there was complete arrest of the whole heart. The gradual slowing beforehand strongly suggests vagal action. However, this slowing was not so marked as in Neubürger and Edinger's case. A pulse of 30 was noticed some three days before death before the repeated fainting attacks began, and this probably means that there was complete heart-block. This may have been a temporary condition, and may have been followed by attacks of arrest of the whole heart.

Previous descriptions have laid stress on the convulsions that occur after the cessation of the heart beat. So far as we know, no previous description has been given of the enormously increased respiration that we observed. One of us (E. P. P.) has found that the ventilation of the lungs in the severest cases of air-hunger is always less than 20 litres a minute; but in severe muscular work four times this amount has been noted. The respiration observed in this case was quite comparable with the huge ventilation due to muscular work. A similar effect is noticed on ligaturing the carotids in animals. It is presumably due to the stasis of CO_2 in the respiratory centres associated with a lack of oxygen, and since the blood normally arrives at the centre almost fully saturated with oxygen, it would require some seconds after arrest of the heart for the lack of oxygen to be felt. The rapid onset of dyspnœa also suggests a local action on the centres, and it may well be, as Haldane and Douglas have suggested, that the lack of oxygen acts by forming lactic acid locally in the respiratory centre.

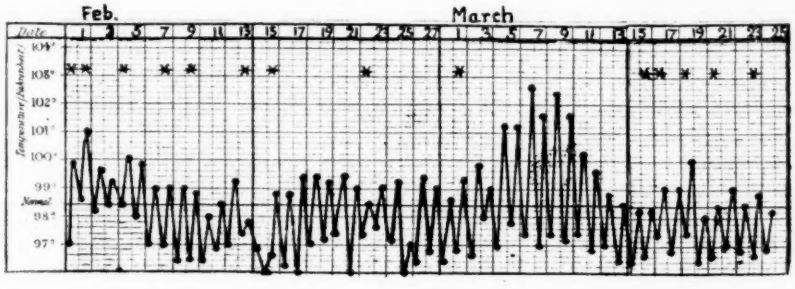
THE SPACING OF INJECTIONS IN THE MAINTENANCE OF A PNEUMOTHORAX.

BY CLAUDE LILLINGSTON, M.B. CANTAB.

IN a retrospect of the development of collapse therapy in pulmonary tuberculosis since it was started in England in 1910 one fact stands out prominently. There has been no great teaching centre or standard work from which the beginner could learn and to which he could subsequently turn for help in difficult cases. The recently published textbook by Dr. Clive Riviere on this subject has therefore met a want. It says much for the intrinsic value of this treatment that it has survived these early vicissitudes. Particularly with regard to the spacing of refills and the total duration of the treatment are the effects of the inadequate teaching of collapse therapy in this country evident. The decision when to discontinue the injections for good requires so much general experience and knowledge of the individual case that it is unsuitable for discussion in a short paper. But the publication of the following case may, perhaps, be useful as a warning against too long intervals between refills.

A man, aged 23, presented on Jan. 14th, 1918, signs of extensive disease of the right lung. The left lung was intermittently crepitant in the second and third intercostal spaces. Sometimes no moist adventitious sounds were audible over this lung. On Jan. 31st the first injection of gas was given, and by the end of February the clinical signs indicated practically complete collapse of the right lung. A few days after the ninth injection, given on March 1st, an acute intercurrent infection sent the temperature vaulting. On this account, and because any extra activity seemed undesirable for the left lung at this critical stage, the next injection was deferred till March 15th, by which date the temperature had become practically normal. After such a comparatively long interval it was anticipated that space for a large quantity of gas would be found. But after only 300 c.cm. had been introduced there was a pressure of +8 cm. of water on expiration. There were no signs of a pleural effusion, but from the root of the lung to its base and round to the axilla and front of the chest respiratory sounds were plainly audible. In the hope that the lower part of the lung had become only loosely adherent to the chest wall, and that the adhesions would give way if a high intrapleural pressure were maintained, injections of gas were frequently repeated, and as high a pressure as + 16 cm. of water was created. With each injection it was, indeed, possible to reduce the air entry on the right side, but not for long. Even the development of a pleural effusion late in April failed to compress the lower half of the right lung, and after May 11th no further injections were given.

This was deplorable, and the only consolation to be extracted from my mistake was the reflection that, owing to the activity of the disease in the left lung, the patient would probably in any case have ultimately fared badly. There are few experiences more disheartening in collapse therapy than to find an otherwise promising case ruined by re-expansion of the lung and its adhesion to the chest wall for lack of timely refills. It is fatally easy to be caught napping when a pleural effusion has developed, particularly when the pneumothorax is incomplete. For as the fluid is reabsorbed the adherent section of the lung appears to act as a base from which adhesions spread to the previously free surface of the lung. But even without a pleural effusion the lung may, as in this case, flap against the chest wall and adhere there, despite every effort to detach it. Looking back on an experience of about ten years and of several hundred injections, I cannot remember a single case under my own care or that of colleagues in which refills were given too frequently. Error to the opposite extreme is, I believe, common, and many a patient's prospects of permanent recovery have been irrevocably impaired. My grateful thanks are due to Dr. Esther Carling for permission to publish this case.



In the chart * indicates injection of gas. In the following table are stated (1) expiratory and inspiratory pressures before injection; (2) after injection; and (3) c.cm. of gas injected.

—	Jan. 31st	Feb. 1st	4th	7th	9th	13th	15th	22nd	March 1st	15th	16th	18th	20th	23rd
(1)	-7-11	-6-15	-4-12	-5-16	-2-12	0-14	-2-10	-2-11	-1-12	-1-10	0-12	+2-6	-2-12	-1-8
(2)	-5-10	-2-10	-2-9	-1-5	+2-6	+3-6	+2-4	+2-4	+6-2	+8-5	+16+10	+16+10	+6-0	+7-2
(3)	300	300	500	600	500	450	500	400	300	300	400	400	500	650

BLUE SCLEROTICS,

IN CONNEXION WITH OTHER HEREDITARY OR CONGENITAL ABNORMALITIES.

By DR. N. VOORHOEVE,

LECTURER ON ROENTGENOLOGY AT THE UNIVERSITY OF AMSTERDAM.

EARLY in 1916 I had the opportunity of examining a father (C. W.) and his two daughters, in whom I found the following abnormalities.

Description of Abnormalities.

1. *Brittle bones* (fragilitas ossium).—The individuals were normal and full-grown at birth; they exhibited no abnormalities, and particularly did not suffer from rickets. They enjoyed good health until at two or three years of age the first bone fracture occurred after a very slight trauma. This was soon succeeded by numerous other fractures; the father had 5 and the daughters 13 and 15 respectively. With puberty the frequency diminished and bone fractures only occurred sporadically. Nearly all the fractures healed without leaving any inconvenience; a few healed in a bad position or did not sufficiently consolidate.

With the X rays the entire skeleton exhibited the same abnormalities—viz., a very thin cortex, which stood out sharply from the surrounding tissues; further, it only contained a slight proportion of lime salts and showed a rarefaction of the bone supports and an absence of every rachitical alteration. In certain fractures little or no endosteal, but very strong periosteal, callus had been formed.

We have here characteristic cases of osteopsathyrosis infantilis. As to the cause opinions are still divided.

2. *The blue sclerotics.*—In the two girls the dark grey-blue colour of the sclerotics immediately attracted my attention; in the father they were concealed by pingueculæ. In both the father's eyes was a very marked arcus senilis. Closer examination by Dr. Smit disclosed no further abnormalities in the eyes. It is quite possible that the father, who has an exophthalmia of his left eye, has only his thin sclerotics to thank for it. This exophthalmia showed itself when, about 6 years old, he suffered from "glands in the eye." He now has besides maculæ corneæ with consequent irregular astigmatism, a myopia of 10 D., and a small sickle in the fundus.

3. The father suffers from hæmophilia. The two girls do not.

Hereditary Inferiority of Mesenchyme.

Recapitulating the above, we have three hereditary abnormalities which find expression in the inferiority of three systems of organs—viz., the skeleton, the sclerotics, and the blood-vessels or blood. We now put forward the hypothesis that we have here to do with an hereditary inferiority of the mesenchyme. On looking up the literature I found that several writers had conjectured that fragile bones and blue sclerotics point to an inferiority in the constitution of the fibrous tissue. Definite proofs were, however, entirely absent and the question has never been clearly postulated or looked into. The organs and tissues descended from the mesenchyme are shown below.

Ectoderm.—Epidermis with its derivatives; central and peripheral nervous system; epithelium of the sense organs; lens.

Mesoderm.—Back segments (voluntary muscles); side plates (all epithelium of urogenitary system, epithelium of pleuro-peritoneal cavity).

Entoderm.—Epithelium of entire intestinal canal with appendages (liver, pancreas, lungs, &c.); epithelium of bladder; gustatory papillæ.

Mesenchyme.—Skeleton; sclerotics; heart, blood-vessels and blood, ? spleen, ? lymph glands and vessels; fibrous tissue, ligaments, involuntary muscles.

The question arises whether the patients exhibit other phenomena which would point to abnormalities in, or to inferiority of, the mesenchyme organs. In the father we find a premature degeneration of the corneæ (arcus senilis) and of the blood-vessels (severe arterio-sclerosis at 54 years of age), besides which the ears stand right out from the head. In the elder daughter the jaws are too small and the lateral incisors are planted inwards. Both little fingers are in radial adduction to the metacarpo-phalangeal joint. All three patients are of slender build and small size and the palate is very high. No further abnormalities were found in the patients, who are very intelligent. The father has scars of tuberculous fistulas in the neck and shows retraction of the top of the left lung.

Inquiry into the Members of the Family.

The patient could furnish information concerning no fewer than 244* members of his family, extending over five generations. Consanguinity did not occur nor any trace of lues.

Of the 244 members of the family 59 are here represented in a genealogical tree. I was enabled personally to interrogate or examine 40 of them. In order not to impede the general view the Groups (*a*), (*b*), and (*c*) have not been included in the diagram.

Group (*a*): Containing father and mother of (*a*), his brothers and sisters and their descendants. Information could be got about 83 individuals of this group. Among them I mention: 1† *hæmophilia* (son of daughter of ancestors); 1† epilepsy; 7 cases of tuberculosis.

Group (*b*): Containing father and mother of (*b*), her brothers and sisters, and their descendants. Information could be got about 69 individuals of this group. Among them I mention: 1† congenital deformity of heart (grandchild of ancestors); 1† born lame, 1† dwarf (great-grandchildren of ancestors); 1 hunchback; 6† tuberculosis.

Group (*c*): Containing father and mother of (*c*), her brothers and sisters, and their descendants. Information could be got about 33 individuals. Among them I mention: 2 hunchback (children of ancestors); 3† lymph gland tuberculosis (2 children and 1 great-grandchild of ancestors); 1 severe rachitis (grandchild of ancestors).

Observations with regard to Groups (*b*) and (*c*) I shall omit. In Group (*a*)—that is, the grandfather of my patient and his descendants, excluding the branch of my patient's father—there is an individual, the son of a daughter of the sire of the family, who died from hæmophilia at the age of 8. We may assume that Group (*a*) conceals even more individuals suffering from hæmophilia, but in any case the hæmophilia, which recurs in later generations, is due to the ancestral pair which head this group.

A list is given of the various congenital and hereditary abnormalities exhibited by the individuals in this genealogical tree.

(1) C.W. + brothers and sisters. (2) C.W. + 3 children. (3) 59 members of the family (including C.W. and children). (4) 33 members of the family (excepting C.W. and children).

—	(1)	(2)	(3)	(4)
Number of individuals	6 ⁑	4 ⁑	59	33
Blue sclerotics	1	3	4	1
(Blue sclerotics*)	(3)	—	(7)	(7)
Brittle bones	1	3	3	—
Hæmophilia	2	1	4	3
Cong. vit. cord.	—	—	1	1
Cleft palate	1	—	1	1
Rachischisis	—	—	1	1
Total abnormalities	5 (8)	7	14 (21)	7 (14)
Individuals affected	5	3	9 (16)	6 (13)
Abnormalities per individual	0·84 (1·33)	1·75	0·24 (0·36)	0·13 (0·26)

* In the cases of blue sclerotics given in brackets the discolouration was less intensive. ⁑ Examined.

This number is a minimum and would probably prove even greater after a very careful examination. Two individuals who each had a bone fracture (at 12 and 44 years respectively) are not indicated as suffering from brittle bones. Two individuals are marked as having suffered from severe rachitis; it is not at all impossible that it was some other, perhaps hereditary, abnormality of the skeleton, and we may also ask whether severe rachitis does not point to an inferiority in constitution of the skeleton. It was my intention only to employ the fixed minimum of the certain cases of inferiority as the basis for my remarks.

The table proves the enormous number of congenital abnormalities of the mesenchyme organs in this family. We have before us a family in which hæmophilia occurs hereditarily. But the inferiority of blood and blood-vessels is not seen exclusively in the presence of hæmophilia; a congenital defect of the heart shows in what a labile equilibrium the constitution of this organic system is found. Brittle bones do not yet occur, but the constitution of the skeleton already shows signs here and there of labile equilibrium; the cleft palate and rachischisis are there to prove it. Blue sclerotics, although less intensive than in my patients, are already found in several individuals, and one of them has, besides, an embryotoxon.

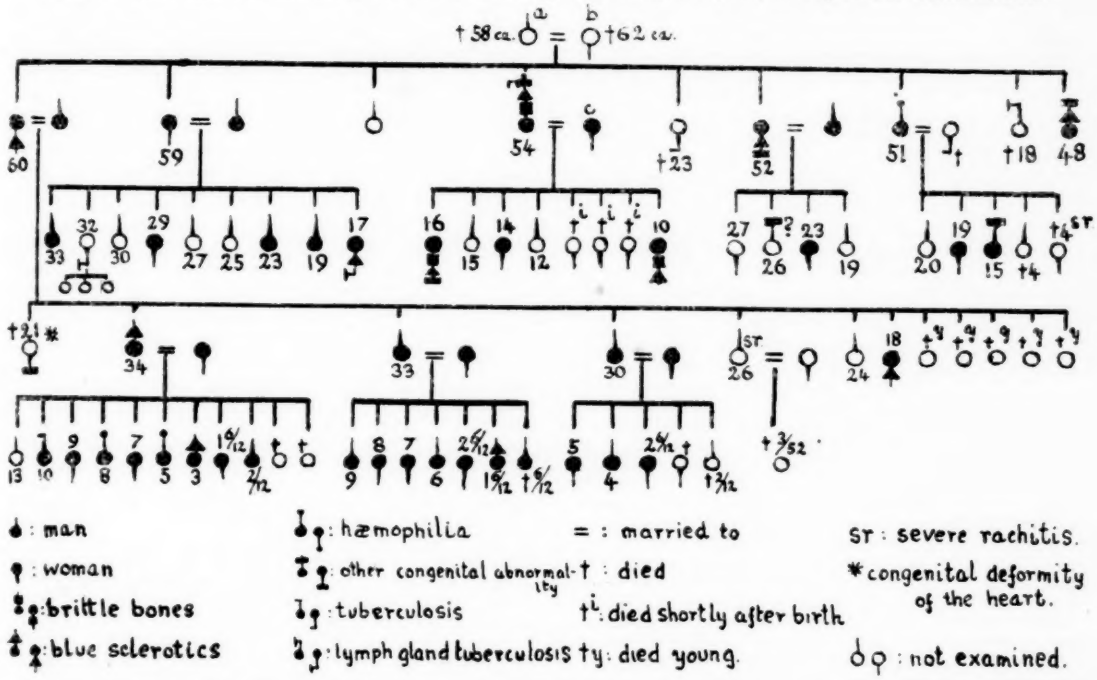
All the abnormalities above described relate to the mesenchyme organs, but of certain mesenchyme organs no abnormalities are here mentioned. These are the spleen, the lymph glands and vessels, the fibrous tissue, the ligaments, and the involuntary muscles. The descent of the

* Infants that died before attaining the age of 2 years are not taken into consideration.

spleen from the mesenchyme is very doubtful, and we know so little about its physiology that it would not be surprising if an inferiority of this organ had not been found clinically. As to the lymph glands and vessels, the number of cases of lymph-gland tuberculosis in this family is striking, whereas the relation of frequency between tuberculosis of the lymph glands and that of other organs is very large. Possibly the diminished resistance of these organs against infection with the bacilli of tuberculosis must be considered as a sign of inferiority. Finally, it is not remarkable if inferior tissues concealed in the body, when their functions are not of great importance, do not show any appreciable abnormality. Further, I need only mention that many women, and also some of the men, belong to the type of the so-called habitus atonicus, without deciding whether this should be considered as a proof of congenital inferiority of the ligaments.

On summing up the above, I am of opinion that the grounds here developed form a strong support for the hypothesis of an hereditary inferiority of the mesenchyme.

Genealogical Chart Illustrating the Inheritance of Blue Sclerotics, &c., through Four Generations.



A possible objection is that the inferiority of these systems of organs was due to some deficient organ or other. The thought of an organ with an internal secretion naturally suggests itself. Such an organ is, however, not only unknown, but its existence is improbable. Moreover, even after a very careful examination of these patients no single abnormality of any of the blood-glands was discovered.

Significance of the Hypothesis.

The presence of an hereditary inferiority in one of the four groups in which the embryonal cells are differentiated in the very earliest stage of development is of far greater general significance than to give an explanation of the origin of the abnormalities found in this family. It is a working hypothesis. It seems to be very important to follow up the combinations of hereditary abnormalities with other symptoms of degeneration in one and the same family. Have such hereditary inferiorities of the whole or of the greatest portion of the mesenchyme been known to occur? Can they likewise be restricted to one germinal layer to the exclusion of the mesenchyme and of the two other germinal layers? Numerous examples appear to point that way.

Among many questions I shall only mention one more: How far can the degeneration of a germinal layer or of the mesenchyme proceed in a family before the other germinal layers also begin to degenerate? In January, 1916, Professor van der Hoeve stated at the Medical Society at Groningen that, together with de Kleyn, he had discovered deafness as an accompanying symptom of brittle bones and blue sclerotics. Professor Burger examined the ears of two of my patients and of two members of their family. All four suffer from typical *labyrinthine deafness*, an hereditary ailment *par excellence*, but an affection of an ectoderm organ. On the other hand, van der Hoeve and de Kleyn and also Bronson found in their patients otosclerosis (mesenchyme), although both the two former and the latter observed in one patient a combination of otosclerosis and labyrinthine deafness. According to the investigations of Kishi, Quix, and van Lennep the atrophy of the Cortian organ in certain labyrinthine abnormalities (in the dancing mouse, for instance) is most probably caused by a primary affection of the stria vascularis, a product of the mesenchyme. The possibility is, at any rate, presented that the affection of the labyrinth in my patients is a further proof of an inferior mesenchyme.

This example shows that an examination based on this working hypothesis may present difficulties, and there is no doubt that their number will not be small. I need only mention the critical classification of congenital and hereditary abnormalities, of symptoms of inferiority in constitution and pathological abnormalities *sensu strictiori*, especially when these occur in the individual in the embryonal stage. Further, a high degree of discernment will be required to distinguish between an abnormality and its inevitable result on the one hand and two consequences of one and the same cause on the other. Moreover, descriptive embryology has yet many secrets to reveal and the experimental branch of this science is still in its infancy, whereas anatomy, physiology, and pathology will but too frequently be unable to furnish the so ardently desired information. But this is no reason why one should allow the explanation of the spontaneous experiments exhibited in nature to pass by with a *non possumus*. If the inductive method does not lead us to the goal, we may at least expect that the deductive method will create numerous questions and points of view the answer to which will add an inducement to prosecute the search. If this hypothesis, even if it should prove to be incorrect, can in any way further this end it will not have been fruitless.

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Medical Societies.

ROYAL SOCIETY OF MEDICINE.

Resumed Discussion on Influenza: Morbid Anatomy.

IN continuing the discussion on influenza which was reported in THE LANCET of Nov. 23rd (p. 704), Dr. B. H. SPILSBURY, discussing the morbid anatomy of the condition, gave an account of the post-mortem findings of 20 fatal cases, 15 occurring in persons between 10 and 37 years of age, the remainder being infants. The most constant condition found was acute inflammation of the air-passages of the vivid "flaming" variety, with abundant purulent exudate in the upper air-passages. He had found an organism having the morphological characters of Pfeiffer's bacillus in the air-passages in 12 out of the 20 cases. In 16 cases there was acute broncho-pneumonia of two types. The first variety was a typical acute suppurative broncho-pneumonia, with a tendency to abscess formation and the constant presence of a streptococcus. In the other, which he called the hæmorrhagic variety, there was (microscopically) hæmorrhage into the alveoli, with little or no fibrin formation, and the pneumococcus was constantly present. In only one case had he found Pfeiffer's bacillus in the pulmonary alveoli, and he regarded the pneumonias as caused by either a streptococcus or pneumococcus. He regarded the condition as a primary infection of the air-passages by Pfeiffer's bacillus, the failure to find this organism in 40 per cent. of the cases being due either to the search not being sufficiently thorough, or because the organism had disappeared before death. Following this infection an invasion of the air-passages and lungs occurred by pneumococci or streptococci, one of these organisms being responsible for the pneumonias. The changes found elsewhere in the body were due to acute toxæmia, and in no case had he found either a pyæmic or septicæmic condition.

Captain J. G. HOPKINS, U.S.M.C., showed specimens of some of the American cases. The striking thing in the early cases was the intense hæmorrhagic type of the bronchitis, and, connecting these bronchi, an area of most intense hæmorrhagic consolidation. In other cases abscesses had been found, and they had had a number of cases with small miliary abscesses. In streptococcal cases there was a tendency to empyema. In one case of subcutaneous emphysema they thought they could trace the origin of the emphysema to a subpleural rupture.

Captain C. F. GRAHAM, U.S.M.C., said that out of 723 cases clinically diagnosed as influenza 239 developed pneumonia, all characterised by an intense cyanosis, frequent jaundice, high fever, and extreme prostration. The pathological findings in the whole series of cases showed an intense congestion of the lung and the respiratory tract, the pharynx and larynx, down to the very smallest bronchioles, approaching in the lungs themselves almost to the state of hæmorrhage. The very frequent presence of the hæmolytic streptococcus gave rise to their conception of the situation—that the streptococcus was the organism most commonly concerned.

Clinical Picture: Bacteriology.

Surgeon-General Sir BERTRAND DAWSON, speaking from the clinical side, said that although the onset was generally acute it might be subacute or insidious, and the disease might start in the throat and not in the nose. The graver form might come on immediately or as late as the sixth day. The seriousness of the cases depended for their characteristics upon the relative prominence of (1) the septicæmia, and In that of the septicæmic cases the patient is in the lying (2) the amount of involvement of the respiratory tract and its nature. In each type the clinical picture is distinctive. posture, breathing quickly, and of a blue colour approaching heliotrope, but there is no true dyspnœa; the patient is fully aware of his surroundings; the heart is rapid and the blood pressure low; there are no physical signs in the lungs except perhaps a few scattered rhonchi, and there is no sputum. There may be purpuric patches and perhaps subcutaneous emphysema. The pulmonary varieties include the broncho-pneumonic cases, hæmorrhagic or suppurative, with dullness, tubular breathing, and increased vocal resonance. Where bronchitis dominates the patient looks obviously ill and suffers from respiratory distress; in the lungs there are scattered rhonchi and large areas of silence; the percussion note is high-pitched and resonant, and the patient is sucking in the lower intercostal spaces; the bronchi are filled with purulent glutinous exudate. In the pulmonary type the findings are the same as in lobar pneumonia. He thought that the difference in the result of bacteriological investigation was due in part to the different methods employed, the difficulty in finding Pfeiffer's bacillus, and the date of the disease on which the examination was made. Evidence tended to show that Pfeiffer's bacillus did play a dominant part; its rôle was a pioneer one in that it prepared the way for other organisms. Its habitat was limited, but it might penetrate deeply, though not to any great extent. With regard to the other organisms, their morphology mattered less than their virulence. In the virulent cases the streptococcus was more often found than the pneumococcus. Diplococci were also found in some cases, and sometimes, on frequent subculture, returned gradually to the pneumococcal form.

Colonel H. FRENCH'S pictures, which were taken at Aldershot, were then exhibited, showing the flushing and cyanosis.

Experience of U.S. Medical Officers.

General W. S. THAYER said that in the early epidemic the onset was sudden, more sudden than in any malady with which he was familiar; a man could tell the exact moment at which he felt ill. Headache was complained of, sometimes chilliness, and pains in the limbs and body. Prostration was rapid, with rise of temperature. The pulse and respiration were not much accelerated; there were much flushing and injection of conjunctivæ; the expression was dull and heavy; there were little cough and few respiratory symptoms. Nose-bleed at the outset was very common; sometimes there was slight coryza or pharyngitis. After 2 to 4 days the temperature fell by crisis to normal. There was no mortality and few or no complications in these early cases, which strongly reminded him of the outbreak in 1889–90. As he had said before, the only group in which complications occurred was among the men who were convalescing from phosgene gas, when there were 20 to 30 severe cases of pneumonia. The epidemic subsided, but there were still a few cases, which gradually grew more severe. Chills were more common at the onset and nose-bleed was very common. Herpes, coryza, and dry pharyngitis occurred. There was little expectoration at first, but it was more frequent later. Diarrhœa was usually present. The illness was severe, lasting 5 to 6 days, and pseudo-crises were not infrequent. Most of the men, if immediately hospitalised, recovered without complications, though there might be persistent bronchitis. When they had to be evacuated, even a short distance, the proportion of complications was much greater. Subcutaneous emphysema was always seen in a certain number of each group of cases, commencing in the neck and spreading downwards, and was probably due to escape of air from alveoli.

Colonel W. LONGCOPE, U.S.M.C., spoke of the epidemic as it occurred among U.S. troops in France, and emphasised the outstanding features—flushed face, puffy eyes, tracheitis, pains in back and in joints and bones and occasionally in muscle, the tenderness of the leg muscles being extremely noticeable. He had the impression that there were two infections—a primary infection and an infection of the respiratory tract, usually pneumonia. He drew attention to two other features. The patients at Brest, who had just landed from the boats, were emaciated, cyanosed, delirious or in coma, and always died. This was probably due to the difficulty in treating on board. In the subacute cases râles and expectoration (purulent) persisted, though the patients were much better. X rays showed scattered shadows throughout the lung. These patients might possibly recover, though some bronchiectasis would remain. Immediate hospitalisation was necessary. Segregation and isolation were equally important, by means of which hospitals had been able to prevent the spread of the disease. In one hospital the patients were segregated according to the germ found. They were at first isolated, and those in whom streptococci or pneumococci were found were placed in another room, as a result of which very little pneumonia developed.

Etiology.—Pulmonary Tuberculosis as a Late Complication.

Mr. HERBERT TILLEY said that in other epidemics pneumonia was regarded as a secondary infection, spreading from the upper air-tracts, whereas in this epidemic he had seen very few cases of complications in the upper respiratory tract, although pus had been very frequently found post

mortem in the sphenoidal sinus. He thought that Pfeiffer's bacillus opened the way in the upper air-passages, and then the pneumococcus, which was always present in the healthy nose, spread to the lungs.

Dr. R. MURRAY LESLIE said that practically no reference had been made to a very formidable late complication—pulmonary tuberculosis. A large number of cases occurred exhibiting symptoms and signs of tuberculosis, including positive bacillary sputum, some months after an attack of influenza. He had had under his care at a metropolitan military hospital during the past few months young soldiers who showed symptoms and signs of tuberculous disease within periods varying from a fortnight to four or five months after an attack of influenza, some of the influenzal histories coinciding with the April and June epidemics at the front. He thought that true influenza often acted as the spark which lights up the conflagration, and that it was a wise precaution to be doubly careful in the convalescent stage of influenza in the case of patients with a constitutional or family predisposition to tuberculosis. In a few instances influenza might actually determine the onset of a fresh infection, though in most cases it might merely light up old quiescent or latent disease. Its action was comparable to that of measles and whooping-cough in children. A series of curves similar to those shown by Sir Arthur Newsholme and Dr. T. H. C. Stevenson, showing the incidence and mortality from tuberculosis, taken at monthly or three-monthly intervals after the recent epidemics of influenza, might throw valuable light upon the actual relationship between influenza and tuberculosis, and the degree of importance to be attached to this acute disease as the determining cause of tuberculosis.

Major F. MEADER, U.S.M.C., said that Transport No. 56 left the United States on Sept. 14th and arrived at port of debarkation on the 21st, with 5951 troops. On the day the transport arrived 574 cases of acute respiratory disease began among the troops. Debarkation was completed on Sept. 25th, and by Oct. 25th 1688 cases had developed. This was about 28 per cent. of the total number of troops. Of those who became ill, 534 developed pneumonia, or 32 per cent. Of those who developed pneumonia 317 died; this was 19 per cent. of the total number of cases and 59·3 per cent. of the cases of pneumonia.

Experience with "Mixed Influenza Vaccine."

Captain W. E. CARNEGIE DICKSON gave an account of his experience in the use of his "mixed influenza vaccine." This was made from about 50 cases, throat swabs being taken from some 20 cases with high temperature before the onset of complications, and washed sputum and throat mucus from about 30 cases with bronchitis, bronchopneumonia, &c. Its approximate composition, taking the whole at 20, was: streptococci, 5 parts; staphylococci, 5 parts; pneumococci, 3 parts; minute Gram-negative influenza-like bacilli, 3 parts; Friedländer's bacilli, 2 parts; other organisms (*M. catarrhalis*, &c.), 2 parts. For prophylactic use 60, 100, and 150 millions were given to adult males at weekly intervals, 40, 60, and 100 millions to adult females, and the amount of reaction produced by these doses appeared suitable in the majority of cases. After testing the dose on healthy persons it was tried on influenzal cases with temperature but no pulmonary complications. The results were considered beneficial, in most cases apparently the disease was shortened and the occurrence of complications was prevented. The vaccine was then tried on cases of purulent bronchitis, bronchopneumonia, &c., beginning with doses of 20, 40, 60, 80 millions, at intervals of 3 to 4 days according to the severity of the case, with some success when the patients were not actually moribund, though there were not yet a sufficient number of cases upon which to base a scientific opinion. He had given the vaccine prophylactically to about 150 persons, and, so far as he could ascertain, only two had developed anything resembling influenza, and these were doing well. Captain Dickson also referred to the question of the influenza carrier. In his hospital practice one of the most noticeable features was the frequent occurrence of small Gram-negative influenza-like bacilli in many of the cases of chronic bronchitis in which, clinically, the suspicion of the presence of influenza had not arisen. They conformed culturally and morphologically with Pfeiffer's bacillus, and these patients constituted, he was convinced, the reservoir of influenzal infection in this country.

Prophylactic Vaccination.

Surgeon-Captain P. W. BASSETT SMITH, R.N., gave an account of the prophylactic vaccine which had been prepared in quantity at the Royal Naval College, Greenwich, and distributed to the depôts and to ships of the Grand Fleet to be given to all on a voluntary basis. Its composition was as follows:—

B. influenzæ (3-5 strains)	...	...	60 million per c.cm.
Streptococci (,,)	...	...	40 ,, ,,
Pneumococci (,,)	...	...	200 ,, ,,

Dose: 1st inoculation, 0·5 c.cm.; 2nd inoculation, 1 c.cm.

In sending out the vaccine directions were given that it was not to be used if acute catarrhal symptoms or fever were present. One medical officer reported that in the course of the inoculations 10 cases occurred. Four of these had received one dose on the day of onset only. All ran a very mild course. Of the 6 not inoculated 2 were mild and 4 severe, with one death. This pointed to the value of the vaccine even in the early stage. At Greenwich 1000 boys at the Royal Hospital School had received both inoculations and no case had occurred among them, though the disease was prevalent in the district. Amongst the thousands who had been inoculated the reaction, with one exception, had been slight, and there had been no evidence of an increased susceptibility or negative phase.

Further Investigations of Prophylactic and Curative Vaccination.

Captain H. E. WHITTINGHAM gave an account of the vaccine prepared by him and Dr. Carrie Sims and the results of treatment with it. It was made from organisms isolated from severe cases in the present epidemic and was used as a prophylactive and as a curative vaccine. It consisted of the following organisms: Streptococcus, 50 million per c.cm.; pneumococcus, 50 million per c.cm.; *Micrococcus catarrhalis*, 50 million per c.cm.; meningococcus, 20 million per c.cm.; and *Bacillus influenzæ*, 20 million per c.cm. The first dose was ½ c.cm., the second, given 7–10 days later, 1 c.cm. The curative dose was made up 1/10 of this strength and given daily in some cases, in others every second day. The prophylactive vaccine had been administered to several hundred people, the local and general reaction being slight. In one institution 156 people were inoculated, 149 were uninoculated—total 305. The case incidence of the inoculated was 8 in 156 (i.e., 5 per cent.), amongst the uninoculated 18 in 149 (12 per cent.). All the inoculated persons who developed influenza had only slight attacks, the febrile period terminating in 48 hours and convalescence being well established by the end of a week. The 18 uninoculated persons who fell victims to the disease had typical attacks with a 5–7 day course in the milder and a more prolonged one in the complicated cases. Pulmonary involvement was distinct in seven of the cases. They did not claim that the vaccine was an absolute preventive, but thought that it would abolish or modify considerably the toxic type of the disease. The dose used as a curative vaccine was in all cases 1 c.cm., containing 5 million each of streptococcus, pneumococcus, and *M. catarrhalis*, and 2 million each of meningococcus and *B. influenzæ*. The first injection was given as soon after admission as possible and repeated daily until the temperature fell to normal. The results showed that cases which were seen early might have their course cut short by a large dose of the vaccine before toxæmia had time to set in. In toxic cases, or those with high pyrexia, antistreptococcal serum 20 c.cm. was given, and 10 c.cm. thereafter daily for 3 to 4 days; vaccine might be given also. As regards serum treatment, cases treated early in the disease had a far greater chance of recovery than those treated late. All cases were severe. Of those injected with serum before the sixth day all recovered—i.e., 6 out of 6, whilst those injected after that day—6 all told—died.

Serum Treatment.—Salicin.

Major G. NEWTON PITT, R.A.M.C., said that hæmorrhagic sputum occurred with streptococcal infection, rusty sputum with pneumococcal, and purulent sputum was invariable with streptococcal infection combined with that of *B. influenzæ*. He regarded the toxic and lethargic cases as almost hopeless from the first. He had seen some benefit occasionally in the lethargic and toxic cases from antistreptococcal serum, 20–40 c.cm.

Lieutenant-Colonel C. E. COOPER COLE, C.A.M.C., spoke of 125 cases treated by polyvalent antistreptococcal serum as supplied by Burroughs and Wellcome or Parke, Davis & Co.

The best time for administration was the earliest possible after onset. Early mild cases cleared forthwith. In extremely toxic cases there appeared to follow a reduction in the toxæmia; many patients who appeared about to die in two or three days held on for about ten days.

Mr. E. B. TURNER gave his experiences of treatment by salicin, which seemed to have a remarkable effect in cutting short the disease, preventing complications, and destroying the infectivity of the patient. The longer the treatment was delayed the longer the disease lasted. Very large doses were necessary (ordinary doses being quite useless), so that from the beginning the patient was drenched with salicin. He began by giving 20 gr. hourly for 12 hours. Less than this was of no value. It was best given in a cachet. He had tried salicylate of soda, but the effect was not so good. There was buzzing of the head and sometimes delirium. He had used these large doses of salicin in patients with heart disease with no ill-effects whatever.

MEDICAL SOCIETY OF LONDON.

Inheritance and Acquirement of Disease: A Study of the Rejected.

A MEETING of this society was held on Nov. 25th, Dr. A. F. VOELCKER, the President, in the chair, when Colonel J. G. ADAMI, C.A.M.C., gave an address on the Physical Census.

With the onset of the war, Professor ADAMI said, we were fully prepared for the preliminary physical examination of the would-be soldier, and when from voluntary we passed to what may be termed, if not "impressed," certainly "impressive" service, and from this to conscription of all men of serviceable age, it was scarcely noticed that at a bound we had established, under the Ministry of National Service, a physical census of the active manhood of the British Isles, and in November, 1917, for the first time, had placed ourselves in a position to gain a comprehensive grasp of the quality of that manhood, of its efficiency and its deficiencies. No civilised country has so dense a population, and none so large a section of population which for an equal number of generations has led a factory existence with all its known attendant effects upon the physical well-being of the individual and his offspring. The figures collected have not yet been fully analysed, but certain National Service Commissioners have already made the necessary analyses for their districts, showing results gravely below the average. Thus for a small West Midland group of those of 18 years one Commissioner finds 660 per mille in Grade I. From a Northern city another obtained 531; in a busy manufacturing town of the Midlands the number was 573; whereas in certain Midland country districts it rose to 805 and 819 per 1000. With such figures as these last it cannot be said that Dr. Keith has placed too high his "Bogey," based on an analysis of the measurements of 1000 Cambridge students.[1]

Statistics of a Representative Section of England.

I am indebted to Sir James Galloway for the monthly statistics for the first half of this year of all the districts in a representative section of England—representative in that it embraces areas which are some of them predominatingly agricultural, others mining, others industrial, among the latter one of the greatest textile centres, and one of our most noted centres for munition factories and workers in metal; along with these there is an important seaport. Taking the Grade I. men alone for April, we have the following figures:—

—	No. examined.	No. Grade I. per mille.
A mining area	7030	703
A munition (metal work) area	8919	660
An industrial area (cotton, jute, &c.)	5295	623
An agricultural area	2871	613
A seaport and shipping area	1238	491
A textile area (woollens)	5001	405
A textile area (,,)	2933	384

Here, granting that we deal with men of the same age-period, we have indications to an even greater extent of the loss of effective man-power in certain classes of the community, and these indications are supported by the fact that it is not in one month's returns only, but month after month the proportion of Grade I. men are materially lower in certain districts than they are in others. The indications are those of a condition so serious that for this reason alone it is essential that the Ministry of National Service continue its work after the war, if only to probe thoroughly into this matter of the relative health and efficiency of our manhood in different districts engaged in different occupations. As a basal investigation it is evident that what is now needed is an analysis of the medical history sheets for 1918, if not of the whole country, at least of areas devoted to special pursuits, or, better still, of those engaged in special occupations, in order to observe the primary condition of those engaged and the progressive effect of those occupations upon the physical state of the workers. We need an analysis of the physical state of, say, 1000 workers in each important occupation belonging to the quinquennia 18–23, 23–28, 28–33, and so on. With this we will possess a sound foundation, and provided with this we will for the first time be able to make positive statements regarding the state of our adult population.

Causes of Rejection in an Industrial Area.

Between Jan. 1st and June 30th, 1918, 24,281 men between the ages of 18 and 51 were examined in a large Yorkshire town. Of these, 1770 (or 72·8 per mille) were placed in Grade IV. There were in addition 74 class M. men so "obviously unfit" that medical examination was dispensed with. It is to be noted that in this area several thousands of miners were called up for examination up to the age of 35 years, and the Deputy Commissioner calls attention to the fact that the majority of the rejections occurred between the ages of 20 and 30. I have arranged his data, not as he did according to relative frequency, but in classes according to the cause of rejection.

Analysis of Main Headings of Causes of Rejection in 1844 Cases in an Industrial (Mining) Centre.

I.—*Infections and their Results.*

—	No. of cases.	Percentage of rejections.	Percentage of total examined.
Tuberculosis (Pulmonary tuberculosis, 468 cases or 25·3 per cent.)	584	31·6	2·3
Valvular disease of heart	188	9·0	0·7
Infantile paralysis	69	3·7	0·29
Otorrhœa	41	2·2	0·17
Chronic bronchitis	39	2·1	0·15
Rheumatoid arthritis	26	1·4	0·1
Disordered action of heart	10	0·5	—
Totals	957	50·5	—

II.—*Injuries and Occupational Conditions.*

Amputations	104	5·6	0·42
Varicose veins	98	5·3	0·4
Injuries (head, back, and extremities)	81	4·9	0·33
Opacity of cornea	12	0·6	0·04
Miner's nystagmus	11	—	—
Flat foot	11	0·6	0·04
Hallux valgus	11	0·6	0·04
Ventral hernia (post-operative)	7	0·4	0·02
Totals	335	18·0	—

III.—*Nutritional and Chronic Disorders and Intoxications.*

Chronic nephritis	43	2·6	0·19
Knock-knee	11	0·6	0·04
Cataract (excl. congenital)	10	0·5	0·03
Amblyopia and amaurosis	6	0·3	0·02
Exophthalmic goitre	1	—	—
Totals	76	4·0	—

IV.—*Conditions in the Main of Antenatal and Natal Origin.*

Epilepsy, major and minor	70	3·7	0·29
Idiocy and arrested mentality	53	2·8	0·2
Talipes	18	0·9	0·07
Myopia	18	0·9	0·07
Dumbness	10	0·5	0·03
Diabetes	6	0·3	0·02
Neurasthenia	5	0·2	—
Other inherited and congenital conditions	11	0·6	—
Totals	191	10·0	—

V.—*Conditions in Part of Antenatal Origin, in Part Nutritional, Occupational, or Infective.*

Curvature and deformity of spine	34	1·9	0·14
Poor physique	30	1·5	0·13
Inguinal hernia	11	0·6	—
Totals	75	4·0	—

[1] THE LANCET, Oct. 19th, p. 542.

The outstanding feature in this analysis is that eminently preventable causes constitute much the greater portion of the headings. Infectious disorders and their results constitute more than half, tuberculosis of all orders roughly one-third, pulmonary tuberculosis just over one quarter. Here in an industrial centre injuries and amputations constitute one-tenth of the causes. What I would urge as the programme for the new future is: Continue the physical examination of young manhood; from its results determine where we are at fault, ruthlessly wage war against those conditions which lower the vitality of our people, and thereby raise the general level of health and strength of our people. And with this, by the establishment of adequate grading, recognise and encourage the best and strongest among our people to the end that, mating worthily, they may propagate a sound, strong stock, and lead in the improvement of the race.

Discussion.

Sir JAMES GALLOWAY referred to the need for secrecy during the war concerning the strength of the drafts for the front which the country was able to send, for no civil department's information would have been of more value to the enemy. The facts supplied to the Premier, on which he based his remarks on the nation's physique, may have been given with the same predominant idea, though Mr. Lloyd George's instinct enabled him to approach surprisingly near to the truth. At that time, however, our enemies were too much concerned with the immediate prospect to pay much attention to that declaration. Now that hostilities were at an end the information which had been collated during recruitment, and which was now being collected and analysed by the Scientific Committee of the Advisory Board, should be presentable to the nation, and he hoped these statistics would form one of the most useful bodies of figures for the hoped-for Ministry of Health. Sir James Galloway described the way in which the National Service medical boards were set up and the careful selection of examiners for the work was made. A very workable scheme of codification had been set up as a result of 12 months' industry, and he distributed among Fellows copies of the schedule in which this was set forth. He spoke also of the work of examination of women in the W.A.A.C.—a less numerous body—under Miss Turnbull, who was assisted by Miss Cameron. A special type of medical man and woman was needed for this work, and those selected had had 12 months of careful training. Consequently, information of vital character was available for 2½ to 3 million people. Concerning many of the results obtained, the Premier's term "appalling" was not in any way too strong, though the results and the proportions of fit men varied very steadily with the kind of occupation followed. Among colliers 72 per cent., 77 per cent., and in one case 81 per cent. were Grade I. men—i.e., men of military age. In contrast to these gratifying figures, cotton weavers yielded 19·6 per cent. Grade I., while Grades III. and IV. amounted to 58·2 per cent. of the whole. In view of the unexpected nature of these figures, a visiting commissioner was sent down, and he reported that the grading carried out by the Board was, in general, correct. Of one day's batch of 59 men only three were found to be in fairly good physical condition. The people here were said to be hard-working and industrious from an early age; they had no time for games, and were content to be earning good money. Tuberculosis, rheumatism, and valvular disease of the heart were very rife. The people worked in a heated and vitiated atmosphere, and on emerging into the outer air easily became subject to bronchial and other troubles. Of 470 examined between two dates 218 were found to have unsuspected tuberculosis. These figures Sir James Galloway further elaborated from his returns. All this surely emphasised the need for carrying on this work of examining and codifying, and he would like to see an examination made of all at about 18 and again when they had had eight or ten years' experience of their life's work. He hoped the medical profession would do their best to make this effort a success.

Mr. D'ARCY POWER spoke of the ease with which thorough examinations could be made. The Special Appeal Board on which he sat was able to make difficult examinations in eight to ten minutes. No provision was made in Sir James Galloway's schedule for mental conditions, but perhaps that would be provided for.

Professor F. W. MOTT spoke of his work on the mental side. He was surprised to find among the inhabitants of a large asylum that 3·5 per cent. were so closely related as parent and offspring, brothers and sisters. One-seventh of the discharged men from the Army were released because of psychoses or neuroses.

Sir ROBERT ARMSTRONG-JONES spoke of the great importance of drill in young life, as shown by the remarkable fitness of the inmates of Dr. Barnardo's Homes.

Dr. E. C. MORLAND, referring to the suggestion that two or three generations of industrialisation damaged the germ cell, asked whether Professor Adami considered such damage to be permanent or was it redeemable.

Sir STCLAIR THOMSON also commented on the importance of the work, of which the medical profession had long been well aware.

Professor ADAMI replied.

LONDON ASSOCIATION OF MEDICAL WOMEN.—The meeting adjourned from Nov. 5th was continued on Nov. 19th.—After a resolution had been unanimously passed that Regulation 40 D of D.O.R.A. was useless for the purpose of diminishing venereal diseases, constructive proposals were discussed, having as their object the arrest of the present widespread increase of these diseases. The proposals included: regulations for keeping the public thoroughfares free from solicitation by either sex and the knowing transmission of venereal diseases, the raising of the age of consent, the registration of lodgings for young people, compulsory secondary technical education for young people under 18. The punishment of brothel-keepers by imprisonment without option of fine, the provision of adequate numbers of women police and the presence of women in police-courts when cases concerning women and children were being taken were also strongly urged. The conclusions reached by the association are being sent to the general meeting of the Medical Women's Federation.

Reviews and Notices of Books.

Emergency Surgery. By JOHN W. SLUSS, A.M., M.D., F.A.C.S., Associate Professor of Surgery, Indiana University School of Medicine; ex-Superintendent, Indianapolis City Hospital; Surgeon to the City Hospital. Fourth edition. London: William Heinemann. (Rebman, Ltd.) Pp. 848. 17*s.* 6*d.* net.

A BOOK on Emergency Surgery may attempt either to include an account of all surgery of an urgent nature, or to limit itself to such of the emergencies of surgical practice as may reasonably be undertaken by the general practitioner. Can it be doubted that the latter is the more useful intention, as it will be the easier of accomplishment? For such a volume is essentially one for the use of the general practitioner, the circumstances of whose work may necessitate his undertaking at short notice, and perhaps far from expert assistance, operative or other treatment which, but for the urgency of the case, he would be glad to leave to others. If, on the other hand, the author is to concern himself with every surgical emergency his book will be loaded and its more important parts obscured by descriptions of cases so rare that no practitioner may expect to meet with them, or of operations so intrinsically difficult that the danger of inexpert performance of them may be actually greater than the risk incurred in waiting for the arrival of one whose training and experience in general surgery fit him for the treatment of such cases.

In our opinion the volume under consideration falls short of success by attempting to be too comprehensive; its author clearly stated, in the preface to the first edition, that "this is surgery for the general practitioner," and so little knowledge is assumed that even a method of making an incision is described and figured, and some of the most ordinary bandages are shown (though we see no reference to the useful many-tail). But, on the other hand, we find accounts and figures of operations so difficult as exposure and suture of the heart and as cervical œsophagotomy, and of such magnitude as amputation at the hip-joint; or, again, of so little urgency as wiring of the patella. Yet there are

omissions, and the reader will search in vain for guidance in a case of perforation of a gastric or duodenal ulcer. While much of the matter is admirably sound and sufficiently lucid, much, again, is too superficially dealt with to be very helpful. Considerable attention has been devoted to the section on military surgery. The book is profusely and for the most part well illustrated, but gains nothing from the inclusion of the coloured figures 420 and 432.

A Preliminary Course of Surgery. By R. L. SPITTEL, F.R.C.S. Eng., Surgeon to the General Hospital, Colombo; Lecturer on Operative Surgery, Ceylon Medical College. With 111 figures in the text. London: Butterworth and Co. 1918. Pp. 466. Rs. 6.6.

THIS book is intended to set forth for the student the first principles of surgery, and to be an introduction to the subject for those beginning their studies. Its author hopes, however, that, as almost the entire field of general surgery has been covered, it will serve as a text-book of surgery for that class of student in India and Ceylon whose limited years of apprenticeship preclude him from the study of larger works. This hope, we think, is too ambitious for fulfilment by the book in its present form; no reasonable limitation of a student's years of study, even though the standard aimed at be not a very high one, should prevent his acquaintance with larger works than this. For the representation of the principles of surgery in this volume is too superficial to be either clear or interesting, while the development of those principles in the later chapters form little more than a collection of lecture notes.

The Practical Medicine Series. Comprising Eight Volumes on the Year's Progress in Medicine and Surgery. Vol. II.: *General Surgery.* Series 1918. Edited by ALBERT J. OCHSNER, M.D., F.R.M.S., LL.D., F.A.C.S.; Major, U.S.M.R.C.; Surgeon-in-Chief, Augustana and St. Mary's of Nazareth Hospitals; Professor of Surgery in the Medical Department of the State University of Illinois. Chicago: The Year-Book Publishers. Pp. 627. $2.50.

THIS volume contains a comprehensive review of the literature on general surgery for the year 1917. The publishers call attention to the fact that although the series is intended primarily for the general practitioner, yet the arrangement in several volumes enables those interested in special subjects to buy only the parts they want. And this volume is well worth buying, either by the general practitioner or by the professed surgeon, for few, especially in these busy times, are so well up in surgical literature as to have no need of such a résumé as this.

We have said that the book is comprehensive; in addition to that it is excellently arranged, with a good table of contents and an index; it is of convenient size, well got up, and with no less than 231 reproductions of figures and 49 plates. The volume is cheap at the price and is cordially to be recommended.

Simple Experimental Hygiene, Physiology, and Infant Management for the Use of School Teachers. By K. M. CURWEN. London: Charles Griffin and Company, Ltd. 1918. Pp. 352. 6*s*.

Miss Curwen possesses varied qualifications as a teacher; she was at one time headmistress of a provincial girls' school in Egypt, and has also been a lecturer in hygiene for the West Riding Education Committee. Her book admirably serves the purpose for which it is intended—namely, to assist teachers to make their hygiene lessons appeal forcibly to their pupils. Dr. G. W. Reid, who contributes a preface, tells us that Miss Curwen was one of the pioneers in the movement for making hygiene a live subject in elementary schools. The book is divided into five parts dealing with (1) the body, (2) food and clothing, (3) the house, (4) vaccination and the prevention of consumption, (5) the care of infants, and an appendix gives some practical hints for laboratory technique. A large number of line drawings illustrate the text, and here we believe that the author would be well advised to obtain a collaborator who will in a future edition make the pictorial part of the book as practical and up to date as the letterpress. We find specially helpful the description of apparatus required at the beginning of each chapter and the blackboard summary at the end. Into a book covering so much ground it is inevitable for a few questionable statements to slip. The infant mortality-rate is now, thank Heaven, not "160 to 170." We do not know what is the "wrong kind of sugar" in tinned milks. The child of 12 months age would, we feel sure, be better for some "hard food." And one or two names are wrongly spelled. But the whole book gives evidence of great care and accuracy, and we can cordially recommend it to school teachers, whether elementary or higher.

Applied Anatomy: The Construction of the Human Body considered in Relation to its Functions, Diseases, and Injuries. By GWILYM G. DAVIS, Pennsylvania. Fifth edition. London and Philadelphia: J. B. Lippincott Company. 1918. Pp. 630. 30*s*.

THE object of this work is to show the relation of structure to function, whether it is normal function or function disturbed or impaired by injury or disease. The present-day medical student is greedy of the practical application of his theoretical studies, and Dr. Davis's book satisfies this praiseworthy greed in complete fashion. The errors and omissions in the book when it first appeared have been more than made good in the later editions, and we can cordially recommend the work to medical students who wish to vivify their anatomical studies, and to practitioners for the purpose of recalling a sound anatomical basis for their practical deductions.

A Junior Course of Practical Zoology. By the late A. MILNES MARSHALL and the late C. HERBERT HURST. Eighth edition. Revised by F. W. GAMBLE, D.Sc., F.R.S. London: John Murray. 1918. Pp. 515. 12*s*. 6*d*.

ALL Manchester medical students and many others were brought up on "Marshall and Hurst," and the book in Professor Gamble's hands meets their need now as completely as did the first edition 32 years ago. The war has even introduced a little romance into the study of biology by stopping the usual supplies of material, and Professor Gamble has found, as might have been expected, that the study of unhackneyed types has a stimulating influence on learners and teachers. For instance, the fluke to be found in the frog's intestine now replaces the liver fluke.

The book is an admirable introduction to the study of zoology; whether an elaborate study of selected types is precisely the kind of introductory biological course for medical study is another matter.

New Inventions.

A NEW LARYNGOTOME AND TRACHEOTOME.

THIS instrument is a modification of Fuller's bivalve tracheotomy tube. One valve made of the hardest steel is rendered 5/16 of an inch longer than the other and the concave edge of this prolongation is ground to form a "scalpel-edge." All the remaining borders are rounded off in the usual way. The tip of the smaller valve is made to fit accurately into the groove of the larger valve of the instrument. The inner tube projects slightly beyond the outer, which then lies in close apposition to it, so that, with the inner tube in place, the "scalpel-edge" is thrown completely out of action. The object of the instrument is to do away with the interval between the tracheal or laryngeal incision and the insertion of the tube, thus rendering the operation far more rapid, and consequently less dangerous to the patient. It prepares and accurately fits its own incision, thus allowing no escape of air or blood, and no ill-effects have been found to follow its use.

The laryngotome is made by Messrs. A. E. Braid and Co., Ltd., Gower-place, London, W.C.

A. LAWRENCE ABEL, M.B. Lond.,
Temporary Surgeon, R.N.

FRENCH SUPPLEMENT TO THE LANCET

Under the Editorial Direction of

Professor CHARLES ACHARD, PROFESSOR OF PATHOLOGY AND THERAPEUTICS IN THE UNIVERSITY OF PARIS.

AND

Dr. CHARLES FLANDIN, D.S.O., MÉDECIN-MAJOR DE 2ME CLASSE; CHEF DE CLINIQUE À LA FACULTÉ DE PARIS.

GENERAL REVIEW OF FRENCH CARDIO-PATHOLOGY DURING THE WAR.

BY CH. LAUBRY,

PHYSICIAN OF THE HÔPITAUX DE PARIS; MÉDECIN MAJOR OF THE SECOND CLASS.

IN considering the abundant output of French works on cardiac pathology during the past four years the preponderant influence of the war must be recognised. The war has disturbed the heart by its fatigues and emotions; it has created various lesions on a vast scale by the epidemic infectious diseases which it has engendered; and, lastly, by its duration and its consumption of effectives it has rendered daily more urgent the question of the functional aptitude of the heart in terms of aptitude for military service. It is owing to the war that methods of investigation have been revised and established, and new ideas have been acquired on the prognosis of valvular and arrhythmic affections.

Overshadowed by this actual war pathology, whose chapters, inevitably arbitrary, would thus have treated of general symptomatology, organic cardiopathy, acquired or infectious, and functional disturbances, research less concerned with the pre-occupations of the moment has continued without a break. The essentials of this research will not be lost sight of, but only a brief allusion will be made thereto.

Diagnosis of Murmurs.

Search for an indisputable objective sign of a cardiac lesion should first be made by means of clinical examination, and especially by auscultation. This method seems somewhat discredited among certain of our colleagues abroad by reason of its disappointments and of the difficulties of diagnosing certain murmurs, which appear insurmountable. To avoid overcoming these difficulties it is alleged that it imports less to know the significance of a murmur than the functional capacity of the heart which produces it. Indeed, the existence of an inorganic murmur does not, as Josué has well said,[1] inevitably indicate unfitness for military service, but every case of organic murmur should be exempted from active service. We hold that, with certain experience and adhering to the principles to which Potain devoted minute study, it is nearly always possible to establish this capital distinction. I have attempted to render it accessible and practicable[2] by showing, firstly, that the important character of a murmur is indicated by the moment of its appearance in the cardiac cycle. If it is diastolic, no matter where its situation, it is always organic and betrays aortic insufficiency. Trémolières[3] thought that the situation of the diastolic murmur varied with the age of the lesion; it should have its maximum at the second right intercostal space when the lesion is old, and is accompanied by dilatation of the right cavities; it would be to the left of the sternum or mediosternal when only the left ventricle is hypertrophic. In reality the variability of this murmur is such that it appears to me to escape classification; it is sufficient to recognise it in order to avoid an error of diagnosis without seeking for the reason.

Systolic murmurs have two important characteristics, the time of their appearance and their locality; if they are holo-systolic—i.e., prolonged and heard in the whole systole—they are certainly of an organic nature; if they are situated at the base and are not followed by a diastolic murmur they are inorganic. I have ventured to differ from the opinion of Aubertin,[4] who attributed the very frequent isolated systolic murmurs of the base to aortitis in course of development. With regard to this point, it is necessary to distinguish between proto-, meso-, and tele-systolic murmurs, the last two being easily recognisable and always extra-cardiac, the first alone bearing on the discussion in exceptional cases—for instance, of cardiac acceleration. It is especially on their account that attempts have been made to modify the conditions of the occurrence of the murmur.

P. Émile Weill[5] has succeeded, by reducing the cardiac rhythm by ocular compression, in causing inorganic murmurs to disappear, which suggests a diagnostic procedure which would be simple, but is, unfortunately, not infallible. In seeking to apply it I have noticed with Harvier[6] that ocular compression modified, not only the rhythm, but also the energy of the cardiac contraction, and, consequently, certain abnormal bruits (*souffles et roulements*) of organic origin. But in these latter effects, as in its well-established manifestations, the oculo-cardiac reflex is inconstant, varying with each individual,[7] and is capable only of furnishing contingent, and not absolute, data.

The diagnosis of a murmur is almost always possible by means of its intrinsic characteristics, and it should precede other methods. The latter are no less useful, and among them radioscopy should rank first.

Radioscopy.

In their classic treatise[8] Vaquez and Bordet have already formulated the rules of the orthodiagraphic investigation of the heart and the aorta, which furnishes exact indications of the cavities in form, volume and significance, and renders control thereof obligatory in every question of fitness. Beaujard[9] has emphasised its utility in an important memoir, in which he gives a series of measurements of the ventricles, describing, with Caillods,[10] certain forms of isolated left or right hypertrophy, designating the latter "transverse heart." It is owing to radioscopy that Vaquez and Donzelot[11] were able to criticise the regrettable facility with which a soldier was said to have idiopathic cardiac hypertrophy, often said to be developmental. Very often, on the contrary, among young individuals with elongated thorax the heart is small and vertical. Vaquez and Bordet[12] have furnished a new factor, suggested by the method of localisation of projectiles—appreciation of the volume of the left ventricle, which they designate index of depth. By means of other research work they have collected these new data in the second edition of their treatise recently completed.

Arterial Tension.

The measurement of arterial tension should be the usual complement of every cardiac examination. It is practised in France with the aid of the apparatus of Vaquez and of Pachon, each constructed on a different principle. The former estimates by means of palpation of the radial artery the disappearance of the beats of the brachial artery by a counter-pressure equal to the maximum tension; the latter registers and amplifies the oscillations obtained by compression of the artery, the feeblest indicating systolic tension, the strongest diastolic. Without disparaging the excellent apparatus of Pachon, the sensitiveness of which is often deceptive for the evaluation of systolic tension, I have attempted to popularise the auscultatory method, the advantages and precision of which have been shown by Tissier (of Nevers)[13] in a series of technical articles. I have therefore adapted to Vaquez's apparatus a fixed instrument, a sort of stethoscope of resonance, by which can be noted the phases of the superjacent pressure and the data of auscultation and palpation combined. Marfan and Dorlencourt in their memoir,[14] notwithstanding their predilection for Potain's sphygmomanometer, have acknowledged the advantages of my apparatus.

The problem of graphic registration of arterial tension demands no less attention. Barré and Strohl[15] have endeavoured to find an elegant solution without adapting it to the exigencies of current practice. The auscultatory method continues to be preferred, whether my routine is adopted or whether, as Cottet desires,[16] it is limited to the binauricular stethoscope. It may and should be controlled, particularly for the measurement of diastolic pressure, by the employment of Pachon's oscillometer. The latter offers the further advantage of giving, by means of the degree of oscillations and the possibility of applying it to various limbs and segments of limbs, indications of local circulatory disturbances, of the comparative pressure of the various arteries (Cawadias[17]), and of the measurement of tension in the lower limbs, which no other apparatus can give. Heitz has employed it with success for the following purpose: to establish the average diastolic pressure in the lower limbs among normal individuals[18] and to show that in case of aortic

insufficiency, even when diastolic pressure remains invariable, relative systolic hypertension is the rule.[19] This technique has permitted him, with Babinski, to pursue his research on circulatory disturbances in paralysis of a reflex nature.[20]

Arrhythmia.

The graphic method should be reserved for the study of arrhythmia It is regrettable that we cannot employ an apparatus as ingenious, portable, and practical as that of Mackenzie, the readings of which are practically sufficient. We remain faithful to Marey's polygraph, which has at once the precision and the faults of a laboratory apparatus. The excellent instrument recently designed by Mougeot,[21] with rectilineal tracing, may be substituted for it with advantage. The precise measurements of tracings which it is possible to obtain by means of a sliding-rule have furnished Mougeot and me[22] with information, as faithful as that of an electro-cardiogram, on cardiac energy, on the nature of extrasystoles or of bradycardia, and on the existence of scarcely perceptible alternations.

Functional Tests.

The defaults of methods of investigation has brought back into favour a series of tests the inexactitude of which was long ago pointed out by Merklen[23] and Vaquez,[24] based on modifications in the state of the pulse and arterial tension provoked by effort. Martinet,[25] Lian,[26] and Aubertin,[27] after a course of work agreed upon, drew up the curves of the acceleration of the pulse, of hypertension, and of return to the normal, the slowness of which would be the objective criterion (at once safe and simple) of the insufficiency of the heart and of the circulation in reserve energy.

Vaquez and Donzelot,[28] to whom military fitness as concerns the heart is determined from the combination of facts, do not share this enthusiasm. Lidy and the present writer,[29] in applying these tests to normal subjects and to others suffering from various heart affections, have observed contradictory and paradoxical results which have caused me to accept it with reserve. Tachycardia and arterial tension result from conditions too numerous to draw from their variations an absolute conclusion on the functional capacity of the heart. Vaquez and Donzelot add judiciously that one could do so were it not that information merely relating to insufficiency of the left ventricle cannot furnish an indication of cardiac insufficiency. These authors, though less eclectic than ourselves, like us, accord a certain value to functional tests on condition that they are interpreted in the light of a comparison with other factors. In a concise critical study Esmein[30] justly points out that they have reference to a limited and special effort. The results are inevitably inferior to those that our English colleagues obtain in their training centres and those that a wise medical man may observe in a field of manœuvres or in a barrack yard.

Brachycardia and Tachycardia.

In diagnosis of brachycardia, for the graphic method should be substituted the atropine test or amyl nitrite (Josué), injection of the former or inhalation of the latter producing acceleration of the heart in the case of brachycardia of nervous or sinus origin. Frédéricq criticises these methods in favour of experimental tests.[31] Josué and Belloir,[32] while recognising the justice of his line of argument, nevertheless maintain that a positive reaction to amyl nitrite indicates the excitation of the vagus, so that it results in total brachycardia, or in exceptional cases of dissociation, and that a negative reaction is proof of a lesional or toxic myocarditic brachycardia. More recently Loeper[33] used the vaso-constrictive properties of adrenalin, measuring the degree of cardiac resistance by the modifications of volume, registered by an orthodiagram, which followed upon a subcutaneous injection, and Mougeot has made attempts in the case of tachycardia with moderating injections of eserine, which promise well.[34]

Organic Cardiopathy in relation to Military Service.

The war has confirmed in an astonishing manner the fact of the remarkable tolerance of organic cardiopathy in regard to excessive fatigue. Aubertin[35] first drew attention to this in the matter of aortic insufficiency and has since confirmed it in cases of all varieties of chronic endocarditis.[36] Doctors who have been able in their hospitals at the front or at home to bring together a number of cardiac cases have drawn up suggestive statistics in this connexion (P. E. Weill,[37] Etienne,[38] Ch. Laubry[39]).

In spite of the conclusions to be drawn therefrom, which are all the more reassuring because dealing with aortic or congenital affections (Grenet,[40] Augé and Nobécourt,[41] Ch. Laubry and Marre[42]), it would appear that the authors agree in omitting to study the bearing, and in neglecting the existence of a valvular lesion in estimating fitness for military service.

As a sequel to the recent communications of Lafosse,[43] Clerc and Aymé,[44] and Gouget,[45] a discussion took place at the Société Médicale des Hôpitaux, and all agreed in excluding cases of valvular affection of the heart from active service; but some, judging by experience and allowing for certain conditions of adaptation, advise for heart cases modified auxiliary service; others, having regard to the difficulties of a rational method of recruiting these cases, request that they should be discharged.

The gravity of a valvular lesion at the front lies less in the cardiac miopragia, which is often nil or negligible, than in the vulnerability of a case of endocarditis to rheumatismal relapse, and also to all kinds of infectious attacks. One heart, the lesion in which has been definitely determined, will behave like the normal; with another, apparently less acutely affected, progressive palpitation, whether obvious or insidious, warrants a grave prognosis.

Relation between Infections and Cardiac Lesions.

In connexion with their genesis acute articular rheumatism is of the first importance, inasmuch as it has grave effects in an endemic condition, and is prevalent in trench warfare. Sometimes its onslaught is evident, at others it is masked by manifestations whose rheumatismal nature is less apparent—e.g., angina, gastric derangment—while yet at other times cardiopathy alone exists or develops, affected by salicylate (Josué, Parturier, and Berrut[46]). One of the predisposing forms, according to Nobécourt and Peyre,[47] is cervical rheumatism associated with sciatic neuralgia, in the course of which almost invariably an augmentation of volume by dilatation of the heart is discernible, either isolated or accompanied by endocarditis or acute endo-pericarditis.[48]

Scarlatina does not spare the heart, and its cardiac manifestations are as frequent among the military as among children. They may supervene in the course of a rheumatismal complication (Nobécourt, Jurie des Camiers, and Tournier,[49] Nobécourt and Gimbert,[50] Florand and Merklen[51]), or they may appear at the outset (Nobécourt,[52] Florand and Paraf,[53] de Massary[54]). They are marked by abnormal and persistent acceleration of the pulse (Nobécourt and Gimbert[55]), by endocarditis, especially mitral, occasionally by pericarditis, with the myocardiac syndrome uncertain.

The epidemics of typhoid fever which raged at the beginning of the war have confirmed the gravity and the persistence of cardiac disturbances which are frequent sequelæ thereof.[56] They similarly accompany complications of paratyphoid, but in this case are more benign and superficial, being limited at the acute stage to feebleness and inequality of the pulse and dullness of the sounds, with embryocardia (Minet[57]), rarely deep-seated, accompanied with phlebitis (Nobécourt and Peyre,[58] Parisot and Orticoni,[59] Etienne[60]). The grouping of these cardio-vascular lesions is the subject of a notable memoir by Carles and Marcland.[61]

In typhus, on the other hand, severe cardiac symptoms are the rule and myocardiac insufficiency and arrhythmia of unfavourable import. We owe to Danielopol a complete account of them, with successful attempts at treatment with strophanthin and adrenalin.[62]

Finally, mention must be made of infectious endocarditis. One form of this, which is less known in France and to which Osler in England had the distinction of drawing attention—the subacute or chronic form—has been the subject of numerous publications. Debré,[63] Denéchau and Picard,[64] Fayolle,[65] Roger,[66] have observed cases which they have studied from a clinical, anatomical, and bacteriological point of view, of which Debré gives a general summary.[67] Achard and Foix[68] have emphasised the anæmic form. Claude[69] the nervous form, of the affection. Lastly, Vaquez,[70] by means of copious valuable documentary evidence and statistics of 17 cases, brings into prominence the fatal prognosis at the expiration of a period varying from 4–14 months and two years. During the war the relation between infection and cardiac lesions, especially valvular, has been established and confirmed.

Effect of Traumatisms.

Traumatisms, in spite of their frequency and their violence, play only a negligible part in the etiology of heart disease. As a result of violent disturbance aortic insufficiency may be seen to develop (Bensaude,[71] Alex. Cramer,[72] Brossard and Heitz,[73]), but these cases, which seem *bona fide*, are excep-

tional. The question may always be asked, in the absence of necropsic findings, whether the traumatism has acted by damaging the tissues or by encouraging a latent infection, as in traumatic aneurysms where syphilis is nearly always the case. In this sense traumatic pericarditis without tissue damage has been mentioned [71]; the accuracy of this view is doubtful.

Functional Disturbances.

Acute diseases may not only create grave and distinct cardiac lesions, valvular or otherwise, but especially may cause a series of functional disturbances which will increase or diminish according as the soldier is exposed anew to the fatigues of the military life or is exempted from them. He enters in that case into the huge group of cases of palpitation or tachycardia through the gateway of infection. But that is far from being the only way of access. Sometimes it is a case of over-exertion and of an actually over-worked heart; at others the organ, affected by a violent disturbance, becomes henceforth continuously tachycardiac (Dejerine and Gascuel,[72] Laignel-Lavastine,[76] Charon and Halberstadt [77]); again, the action of asphyxiating gases may be in question (Heitz,[78] Lian [79]); while yet again, emotions whose repetition may act as a substitute for acuteness may produce progressively a condition which the emotion produced at the outset.[80]

The war has by no means created this category of patients in its entirety, as Gallavardin has justly remarked.[81] It has often merely revealed them. In time of peace these cases existed, but the subjects adapted themselves to their hearts; they adjusted their efforts and occupations to their functional capacity and thus experienced no need to have recourse to medical aid. We considered them as emotional and unstable folk; we recognised willingly the sincerity of their sufferings. But in the absence of any objective symptom we supplied a favourable prognosis and gave them as sole treatment congenial and comforting assurances. The new and onerous obligations of military life have literally encumbered the hospitals with these types of neglected cases, and on account of their frequency it has been urged that they should no longer be viewed with scepticism. In England they have called forth discussions and been the object of an authoritative report by Dr. Thomas Lewis (see THE LANCET, 1917, i., 580).

In France, too, there have been attentive observers to whom the only reproach that can be addressed is that they have not coördinated their efforts or classified their conclusions. One may recall the works of Martinet,[82] Lian,[83] Aubertin,[84] Clerc and Aymé,[85] and especially the critical review of Gallavardin,[86] in which the eminent cardiologist of Lyons does not merely analyse in detail the work of Lewis, but also furnishes a personal study, a model of brevity and modesty. Arterial hypertension appeared to Gallavardin to occur more frequently than Lewis had suggested, a view with which Aubertin agrees,[87] as also Du Castel [88] and especially Merklen,[89] who makes of it the characteristic of the syndrome and a factor in classification. It is, in fact, a contingent symptom which we have never been able to distinguish clearly, and which appears to us fleeting, transient, and often as unstable as the heart itself. When it exists it is systolic tension alone which is the cause, for we refuse to admit to this group, as Merklen does, the cases of minimum tension remaining raised in a perceptible and permanent manner. It is a question from that time of true hypertension, from varying causes, which has become tachycardiac.[90]

Diagnosis of Disturbances of Function.

It is necessary to obtain for each patient, as Gallavardin advises, with minuteness and patience a series of curves which will demonstrate the manner of the rhythm, normal curve, curve of situation, nycthemeral curve, and even the curve of emotivity. By means of this analytical study, somewhat opposed to the synthetic study, the problem of aptitude is solved, not mathematically, but clinically, in accordance with Lewis's recommendations. By making use, as I did in the hospital of Professor Vaquez, with the coöperation of my collaborators, Esmein, Mougeot, and Bordet, of a thorough clinical and radioscopic examination of the heart, by hunting out thus the cases of slight endocarditis, incipient valvular lesions, isolated dilatations of the cardiac cavities, myocarditis in course of development, which in cases over 40 years of age frequently conceals itself under a mask of tachycardia, and by eliminating cases of true and permanent hypertension, we concentrated our attention on a group of pure instabilities whose importance was easily established, and our military decisions are rarely nullified by the subsequent conduct of the subject. Our decisions are also in agreement with the discreet conclusions of Gallavardin, Clerc and Aymé, and Aubertin.[91] We decide upon discharge, auxiliary service, or modified active service either with mounted troops, or in training under surveillance, according to the gravity or persistence of the tachycardia, or to the degree of instability which is either calmed definitely by rest or in a period of a few seconds changes its rhythm in a disconcerting manner. For each case it is a question of the species of disturbance, and it is the same from the pathogenic standpoint. It must be ascertained whether the disturbances of function arise from an infection, from slight myocarditis (Lian [92]), from toxæmia, or from nervous loss of equilibrium, either constitutional or acquired, which is itself controlled by a disturbance of the internal secretory glands. In considering merely the polymorphism of the etiological factors, the dissimilar indirect elements of a syndrome, which is only uniform in appearance and of which ultimate research should tend to dissociate the constituents, the divergence of authors and the impossibility of adopting a uniform theory become comprehensible.

Tachycardia is not the only form of cardiac instability that concerns the soldier. On the other hand, arising from the same origins, but not on so vast a scale, is brachycardia analogous to the brachycardia of convalescence. It should end in recovery after a sufficiently long period of time (Binet,[93] Gouget,[94] Hirtz [95]). Several forms of this, as we have observed with Esmein,[96] are the expression of a total and persistent atrio-ventricular dissociation.

Progress of Current French Work on Cardiac Pathology.

The advance in cardiology brought about by the war, of which we have attempted to sketch the amplitude in outline, has but momentarily and feebly disturbed the normal current of French work on cardiac pathology. After a stationary period brought about by events there have appeared memoirs on the vexed questions of the physiology of the heart, its functional localisations, and the pathogenesis of certain forms of arrhythmia, as well as of others more exclusively clinical or therapeutic, and of others in which the mechanical point of view is abandoned for the humoral. It concerns us less here to analyse them than to allude to them briefly.

Petzetakis has studied the effect of the section of the cervical marrow on the rhythm,[97] and, pursuing his observations of arrhythmia, has demonstrated the possibility of an inverse cardiac conductibility with retrograde extrasystoles and post-extrasystolic ventricular automatism.[98] Pezzi,[99] by registering graphically the effects of ocular compression, has remarked the production of extrasystoles, thus contributing to the elucidation of the mechanism of the latter, which the experimental research of Pletnew has since crystallised.[100] We owe, further, to Pezzi's work a new interpretation of the gallop rhythm and the rolling sound of Flint—viz., aortic insufficiency—which he attributes, on the evidence of the tracings, to auricular hypertrophy. I will pass over the numerous irregularities which occupy so much space in the periodicals, while mentioning the form of cardiac inversion reported by Clerc [101] in a discourse on pathogenesis and embryology, which exhibited the peculiarity of not being accompanied by visceral transposition.

The variations of azotæmia among cardiac cases may arise from simple oliguria or from defective functioning of the kidney or liver. Josué and Parturier,[102] for instance, have described an azotæmia from oliguria without affection of the kidney, a renal azotæmia, as well as azotæmia from relative oliguria among cardio-renal cases and also among cardio-hepatic cases oliguria without azotæmia. The first naturally subsides under the influence of digitalis.[103]

Ch. Achard and Leblanc,[104] who have given attention to the same phenomena, assign a rôle to the variations of renal concentration, the stasis when prolonged diminishing temporarily the concentrating power of the kidney.

In conclusion, Vaquez, in elaborating his treatise on "Diseases of the Heart," adds to his records the most original chapters on his conception of angina pectoris,[105] on the symptoms of resorption of an œdema,[106] in which he traces the effect of phenomena, not merely mechanical but also toxic, analogous to anaphylactic shock, and has recently produced his "Introduction to the Study of Diseases of the Heart."[107]

This documented review of the men and methods which have gradually transformed cardiac pathology could not be better concluded than by recalling the new therapeutic methods of Vaquez. For the efficacious but dangerous

intravenous injections of strophanthin Vaquez has substituted Arnaud's injections of "onabaine," extract of strophanthus kombe, and has made from it an active medicament, not destined to supplant digitalis, but having, along with it, its proper indications, represented by a rational appreciation of the insufficiency which it is intended to combat, and which is more especially insufficiency of the left heart.[108]

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METHODS OF ESTIMATING AUGMENTATION IN DEPTH OF VOLUME OF LEFT VENTRICLE.

By Dr. BORDET,

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If it is usually easy to determine by percussion the area of cardiac dullness and to estimate the degree of augmentation of the left ventricle in cases of considerable hypertrophy of this cavity, it is often impossible to obtain by clinical means a satisfactory estimation of the volume of the heart when it has only suffered slight modifications. Radiological methods of precision—i.e., radiography at a distance of three metres—and orthodiagraphy are the only means of obtaining information of great exactitude.

The augmentation of the longitudinal diameter of the cardiac area, the lengthening of the left margin and the accentuation of its convexity, the globular appearance of the point and its depression constitute objective signs of left ventricular hypertrophy. These signs may always be insufficiently characterised, and may occasionally be lacking when there does, in fact, exist a certain degree of hypertrophy. If, therefore, it escapes radiological investigation it is because it is not sought in the part of the organ where it manifests itself anatomically. The anterior or posterior view of the cardiac shadow indicates the dimensions of the heart in a longitudinal and transversal direction; it does not reveal its development at all in an antero-posterior direction. Thus, if it is taken into account that the left ventricle occupies but a narrow strip of the left margin and that it is situated almost entirely on the posterior portion of the organ, the conclusion suggests itself that it is in depth that this cavity develops when it becomes augmented in volume. Every method, therefore, which has for its aim the determination of the variations in volume of the left ventricle, in the direction of its principal development, will lead to the recognition of cardiac hypertrophy as early as possible after its commencement. Professor Vaquez and I[1] make use of the two following radioscopic methods:—

1. *Estimation of the angle of the disappearance of the apex of the heart in the right posterior oblique position.*—In examining an individual on the screen, placed in the dorsal position, if the body is made to describe a rotatory movement from right to left the pictures of the heart and the vertebral column travel in an inverse direction; the former is displaced towards the right, the latter towards the left, and a moment arrives when the external profile of the apical zone before disappearing becomes level with the spinal apophyses. The angle at which the shadow of the apical zone disappears increases with the extent of the globular condition of the apex of the heart and its development in depth.

To calculate this angle a goniometer is used, which gives the degree of obliqueness of the bi-scapular line with the margin of the screen. Multiple observations have led us to the conclusion that the angle of disappearance in normal individuals is 25–30°. Beyond 30° authorises the conclusion that there is an augmentation of the ventricular volume.

2. *Ascertaining the index of depth.*—This method does not require the use of any special measuring apparatus. The patient to be examined is placed in the direct anterior position, the region of the sternum in contact with the screen. The normal projection of the apical zone of the heart and its deformation by an oblique ray resulting from the lateral displacement of the tube over a fixed distance are marked off successively. It is a method well known to radiologists for the locating of foreign bodies. The conditions necessary for the experiment are obtained by a fixed screen placed at a certain distance from the tube. The greater the depth of the ventricular development the sooner will the oblique ray meet the posterior contour of the heart and the further from the normal point will its projection be. The distance between the two points of projection, marked on the screen by a pencil, constitutes the index of depth. It varies among normal adults from 7–14 mm., the screen being at 60 cm. from the focus and the displacement of the tube 10 cm. Beyond 14 mm. the development of the depth of the left ventricle is exaggerated. In cases of acute hypertrophy it reaches 20, 25, or 30 mm.

These two methods give analogous indications. They exercise mutual control, and recourse should always be had to one at least to complete a volumetric examination of the heart. The measurement of the index, on account of its great rapidity, appears to us a very advantageous method in a military centre of cardiology, where numerous radioscopic examinations must be effected daily.

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THE LANCET.

LONDON: SATURDAY, NOVEMBER 30, 1918.

The Antiscorbutic Factor.

WE publish this week a Memorandum on Food and Scurvy issued by the Food (War) Committee of the Royal Society. Comment has already been made in these columns on the practical manner in which the highest scientific authorities in this country have placed their special knowledge at the disposal of the Government, and the Memorandum is one instance of many which show how valuable the services so rendered have been. This document has been based chiefly upon investigations which have been carried out at the Lister Institute, and the statement as to the cause of scurvy has nothing new about it save the definite recognition of the presence in many foods of certain accessory basic substances the exact nature or composition of which remains obscure, but whose benign influence is indubitable. These substances are present in a number of fresh foods and are a special characteristic of oranges, lemons, and fresh green vegetables, though swedes, potatoes, and other roots and tubers contain them; they are present in traces also in fresh meat and milk. They are deficient in all dried and preserved foods, and they are destroyed, we are reminded in the Memorandum, by prolonged heating. It is further pointed out that there is no association between scurvy and tainted food, and that as alkalies destroy antiscorbutic properties soda should not be added to the water used for the cooking of vegetables. The one new observation by the Committee with regard to the cause of scurvy, it will be observed, is an omission and not an assertion: in discussing etiology the word "limes" is absent. This is significant, because the popular view, and one endorsed until lately by the medical profession, has been that lime juice, as ordinarily prepared, is a specific; it is now found to be useless for the prevention of scurvy in the preserved form which it usually takes in the Navy.

Such, at any rate, are the irresistible conclusions of the interesting communication entitled "The Relative Content of Antiscorbutic Principle in Limes and Lemons," which we publish this week, by Dr. HARRIETTE CHICK, Miss E. MARGARET HUME, and Miss RUTH F. SKELTON on the experimental side of the question, Mrs. ALICE HENDERSON SMITH contributing a historical report. The work emanates from the Lister Institute, Director's Department, and is, in fact, the careful and illuminating investigation upon which the Memorandum of the Food (War) Committee of the Royal Society is based. It was found that when the antiscorbutic value of the juice of fresh limes was compared experimentally with that of fresh lemons the former fruit was distinctly inferior. The experiments were made on guinea-pigs and monkeys. Volume for volume fresh lime juice possesses, we are told, a potency of about one-fourth that of lemon juice, and in one instance severe scurvy, which had developed in a monkey on a diet containing a small daily ration of fresh lime juice, was cured by an equal ration of fresh lemon juice. Preserved lime juice was found quite useless for the prevention of scurvy, even when the dose was pushed to the toleration limit. The experiments allow that here the age of the samples might have been held to account for their inefficiency. Experiments still in progress with preserved lemon juice have given promise already of good results.

A reference to the history of the treatment human scurvy completely confirms the experimental findings, and Mrs. HENDERSON SMITH is to be congratulated on a valuable and amusing piece of research. At the period when scurvy was eliminated from the British Navy by the agency of "lime juice" that term was applied to the juice of lemons, and it was not until the second half of the nineteenth century that the juice of West Indian limes was adopted in the Navy and Mercantile Marine. In her historical inquiry Mrs. HENDERSON SMITH quotes the history of two Arctic expeditions—that of the *Investigator* in 1850 and that of the *Alert* and *Discovery* in 1875. The former, supplied with lemon juice, experienced remarkable immunity from scurvy during the first two years of great difficulty and privation; the latter, supplied with lime juice, suffered severely from scurvy at the end of the first winter spent in the Arctic regions. The coöperation of the four authors completely establishes their theses, so exactly does the historical evidence bear out the biological research. And once again we are reminded that man is not a steam engine, though in discussions on diet the comparison is generally convenient. The calorific value of food rightly enough claims first consideration when discussing questions of efficient dietary, but it is clear that the calorie avails nothing without the coöperation of accessory substances. This is where the analogy between the requirements of the human machine and the steam engine breaks down.

The Inheritance of Abnormalities.

DAY by day cripples almost beyond number are leaving hospital or returning from distant prison camps. Some of them are already married men; many of the remainder will have the immediate opportunity of marrying. Doubt has been widely expressed in regard to the effect of such unions on the coming generation. Few, even of the uninformed, think that a wooden leg or a glass eye is handed on to offspring, but ignorance is widely spread in regard to the inheritance of abnormalities, and the present is a suitable time for re-stating our knowledge on the subject. We take as our text the interesting communication which appears on another page from Dr. VOORHOEVE, of Amsterdam, on a pedigree showing hereditary abnormalities of

several kinds—blue sclerotics, brittle bones, hæmophilia, and others. Dr. VOORHOEVE suggests as a tentative hypothesis that all these abnormalities are due to congenital inferiority of the embryonic mesenchyme, leading to abnormal effects of different kinds in the several members of the family. Whether this hypothesis is well-founded or not, the pedigree is undoubtedly of great interest, as showing the manner in which several uncommon congenital defects are transmitted. In recent years much work has been done on the inheritance of congenital abnormality, and the excellent pedigrees collected, for example, by NETTLESHIP in various affections of the eye, DRINKWATER and others in brachydactyly, and those issued under Professor KARL PEARSON'S direction in the "Treasury of Human Inheritance," show that quite a considerable number are inherited according to MENDEL'S law. Those that do so fall into three classes: (1) those in which the defect behaves as a Mendelian dominant; (2) those which are recessive; and (3) those which are "sex-limited" in transmission. A dominant character is transmitted only from an affected parent, and when the other parent is normal the expectation is that it will appear on the average in half the children. Examples of this class are brachydactyly, "split-foot," congenital cataract, retinitis pigmentosa, and a number of other abnormalities are almost certainly transmitted in the same way. In none of these does an unaffected member of an affected family ever transmit the defect. Recessive characters, on the contrary, only appear if the "factor" for the defect is received by the child from both parents. Each parent may thus unwittingly bear the "factor" without showing any trace of it, but if the germ-cells which unite in fertilisation both possess it, the child will show the defect. The best-known example of this class is albinism; others that are said to be transmitted in the same way are some forms of deaf-mutism, hereditary epilepsy, and insanity. Rare affections of this class are liable to appear most commonly in the children of first-cousins, for it is more likely that the factor will be present in both parents if each receives it from a common ancestor. Affections of the third group, showing sex-limited transmission, occur chiefly in males, very rarely in females, and are transmitted from an affected man through his daughters to half their sons. The sons of an affected man are normal and do not transmit; his daughters appear normal, but on the average half their sons are affected and half their daughters are again transmitters. Only if an affected man marries a transmitting woman can the affection appear in a female. The best known examples of this class of hereditary defect are green-red colour-blindness, horizontal nystagmus associated with deficient pigment, night-blindness, and hæmophilia.

In addition to the abnormalities which are certainly or probably inherited, according to MENDEL'S law, there are a number of others, such as, if we are not mistaken, hare-lip and cleft palate, which are undoubtedly hereditary, but which are irregular in their appearance, being sometimes transmitted direct from parent to child, and sometimes appearing in the children of normal persons who belong to affected families. It is not impossible that the explanation of this irregularity is that the character requires for its manifestation the presence of two independent hereditary "factors," neither of which alone is sufficient to produce it. When such a condition exists in animals or plants it is easy by experimental breeding to demonstrate that the coöperation of two factors is required, but when our only means of investigation is limited to the collection of pedigrees the analysis of such examples is fraught with considerable difficulty, and in many instances no definite solution can yet be offered. Only by the collection of carefully verified pedigrees can a complete analysis be hoped for, and for that reason especially we welcome Dr. VOORHOEVE'S contribution. His family illustrates one of these anomalous cases. The blue sclerotic is transmitted sometimes direct from parent to child, but there are two instances in which members of the family recorded as unaffected have affected children. Since the abnormality is mentioned as varying in intensity it is possibly irregularly dominant, or dominant only when some other factor is present in addition. The brittleness of bones is recorded only in persons having blue sclerotics, and is transmitted direct from parent to child, but there are a number of persons with blue sclerotics and no bone-brittleness. Another interesting feature is the manner of occurrence of hæmophilia. This pedigree supplied by Dr. VOORHOEVE resembles the classical examples in showing the disease confined to males, but differs from them in the manner of its transmission. The disease presumably came into the family through the male ancestor, since one of his sister's sons is recorded as being affected, and yet it appears in his sons and is also transmitted through one of his grandsons to a male child. Evidently, therefore, hæmophilia in this family is not transmitted according to the normal rule of sex-limited inheritance in which an affected man never transmits either to, or through, his sons but only through his daughters. Experiments on animals, especially those of T. H. MORGAN on the fly *Drosophila*, have shown that characters which superficially are so alike as to be easily confused, may be inherited quite differently, and from this and other anomalous cases that have been recorded, it seems not improbable that there are at least two forms of hæmophilia, due, perhaps, to different ultimate causes, and differently inherited, but clinically showing similar symptoms. Only the careful collection of pedigrees by qualified observers can elucidate such problems as these. The invitation to further research is pressing.

About the origin of these inherited defects nothing is known. It may be safely asserted that mutilations are never transmitted, and most biologists would say with equal confidence that no effects impressed on the body from without can influence the offsprings. A few keen observers find contradiction here in the depreciation of human stock under industrial conditions. Speaking on Monday evening at the Medical Society of London of the painful impression left on his mind when visiting the industrial centres of northern England after a long absence, Professor J. G. ADAMI went on to say:

> The stunted appearance of the workpeople in spite of apparently abundant food, and of cottages no longer back to back, but in fair sanitary condition, lead to the conclusion that we have to deal, not with a condition of individual acquirement, but with a germinal defect: fathers and mothers engaged day in, day out, at indoor occupations, undergo a slow sapping of their strength and a low form of intoxication which tells on the germ cells as on the body in general, so that the offspring comes into the world in an enfeebled condition and with incomplete endowment of cellular activity.

Experiments like those of STOCKARD on the production of defective descendants from guinea-pigs treated with alcohol also suggest that it may happen that toxic substances circulating in the body will so affect the germ cells as to give rise to abnormalities which reappear, sometimes even intensified, in later generations. But whether such causes as these, or accidental abnormalities in the nuclear division of a germ cell, are responsible for the first appearance of congenital abnormalities is at present entirely beyond our knowledge, and is one of the most pressing problems which biology has to face.

Annotations.

"Ne quid nimis."

UNIVERSITY REPRESENTATION.

IT is clear that there can be no representation of the medical profession in Parliament as a profession, but university constituencies are the ones which, on the one hand, are most likely to send Members to Parliament who understand medical questions in relation to general sociology, and which, on the other hand, offer the best chance to the medical man of election in recognition of his equipment. It appears that there will be contests in all the university constituencies in Great Britain. In the University of London there are four candidates for the single seat—Sir Philip Magnus (Coal. U.), Mr. Sidney Webb (Labour), Mr. A. A. Somerville (Teachers), and Major-General Sir Wilmot Herringham, physician to St. Bartholomew's Hospital and consulting physician to the Forces in France, who declines to label himself as of any party, but who will support the present Government in its efforts to complete the war. For the three seats of the four combined Scottish universities there are seven candidates—Sir Henry Craik and Sir Watson Cheyne, the sitting Members, are again candidates, as well as Dr. P. Macdonald and Mr. T. M. Watson, of the Labour Party, Mr. D. M. Cowen, of the Council of Teachers, and Professor W. R. Smith. There are several medical men who would be willing to stand even at this late hour if constituencies were available, but the lateness of the attempt to organise medical candidatures prevents assistance being rendered, while the candidates for university suffrage have been arranged. The Medical Parliamentary Committee is endeavouring to arrange for a supply of medical speakers to assist candidates as required, and to this end the coöperation of the British Medical Association, the National Medical Union, and the Medico-Political Union has been invited.

THE PROBLEM OF A CLEAN MILK-SUPPLY.

IT has been demonstrated again and again that our milk supplies are collected and delivered under most reprehensible conditions, and yet no serious step has been taken towards reform. But the urgency of the problem has, at all events, received the recognition of the Ministry of Food, which has recommended the Government to take over the wholesale distribution of milk, a proceeding which ought to result in the delivery of a clean supply. The Manchester City Council are contemplating dealing with that city's milk-supply in the same way, and under the instructions of a subcommittee appointed by the sanitary committee of the council Professor S. Delépine has presented a report on two important matters connected with the problem. These are (1) the best method of determining the degree of contamination of samples of milk for administrative purposes; and (2) the actual state of the Manchester milk-supply. Taking the second point first because it can be dismissed in a few words, the results shown by Professor Delépine as regards contamination by dirt of Manchester milk "are deplorable." The contamination progresses from collection to delivery. Seriously contaminated at the stations, the condition of the milk is much worse by the time it gets into the shops and worse still by the time it arrives at the actual consumer. In deciding upon the best administrative procedure for determining the purity of the milk-supply Professor Delépine is led to recommend two methods: (1) the counting of the number of bacteria per c.cm. of milk, which, of course, involves time and the services of a skilled bacteriologist; and (2) an incubation method in which is recorded the time required for the milk to go sour under certain conditions. It is suggested that this latter method, if worked out and standardised, might provide a reliable test as to the purity of the milk, which could be carried out after a short period of training by almost unskilled persons. We believe this to be a valuable suggestion, for in this way the farmer who is anxious to supply a clean article might be furnished with a reliable and comparatively simple test and means of control. Particulars are set out by Professor Delépine as to how and why contamination takes place at the farm, on the railway, at the dealer's shop, and during distribution, and the steps that should be taken to prevent contamination at all points are described. The report, enforced by much painstaking work, presents the results of very careful and extensive scientific investigation.

TREATMENT OF GANGRENE OF THE LUNG BY INDUCTION OF PNEUMOTHORAX.

THE treatment of gangrene of the lung remains disappointing, in spite of much research given to it both on the medical and surgical side. Excision has proved too dangerous even in the most skilful hands. At a recent meeting of the Académie de Médecine of Paris M. P. Émile Weill claimed good results from the induction of pneumothorax. This procedure, which has found an assured place in dealing with caseating lung tissue, is alleged to act on the gangrenous focus by causing its discharge with formation of a cavity, the walls of which subsequently adhere to one another, the patient being cured in a short time. For the practice of this treatment it is necessary, as soon as the diagnosis is made, to examine the affected lung with the X rays, which will show the position of the focus and the condition of the pleura. In one of M. Weill's cases there was a large serous effusion, but usually the pleura contained only a few cubic centimetres of serous or sero-hæmorrhagic fluid. It is then easy to remove the fluid and insufflate under the control of the screen. In the rare cases in which the pleura has not reacted with effusion nitrogen is injected into the potential pleural cavity under manometric control in the same way as for the treatment of pulmonary tuberculosis. If there are pleuritic adhesions the injection would be performed at a point where the lung is not adherent, and it probably would not be difficult to break down fresh adhesions. M. Weill generally found it necessary to renew the pneumothorax after a few days. This is not surprising in view of the fact pointed out in our present issue by Dr. Claude Lillingston that irreparable

harm may be done by too long spacing of the injections, while their frequent repetition appears to be quite free from risk. In pulmonary gangrene when a complete pneumothorax is produced M. Weill finds that the temperature falls, the expectoration dries up, the fœtor of the breath disappears, and a complete cure, functional and anatomical, which may be followed on the screen, is brought about in less than a fortnight. Even when other gangrenous processes complicate the pulmonary gangrene temporary improvement results. The temperature then falls for a short time but rises again, in spite of the cessation of the expectoration and fœtor, and the fatal progress is resumed. It is therefore important to diagnose pulmonary gangrene early, and to intervene before complications have transformed a curable into a fatal malady. The method may be assisted by the usual medical treatment. In the case of a man suffering from pulmonary gangrene complete radiographic and clinical cure was produced in 11 days. Pneumothorax was twice induced at an interval of five days. The first operation led to the formation of a cavity with fall of temperature, the second to cessation of expectoration and apyrexia. In another case there were the complications of serous pleurisy and gangrenous pericarditis. The pneumothorax suppressed the pulmonary disease, cicatrisation of which was found beginning at the necropsy, but the cardiac complication was not influenced, and, after a brief improvement, it proved fatal. Gangrene of the lung is fortunately a rare condition, but M. Weill's experience should direct attention to a possibly effective method of dealing with it.

LIGHT AND HEALTH.

IN Switzerland cow-byres are lighted by electricity. Some of the pig-styes are also so lighted, presumably more for the convenience of the caretakers than of the actual inhabitants. In the rural parts of our own country such amenities are not available even for the human population. The horrible darkness of the country is, indeed, the townsman's chief complaint when he is forced to live under rural conditions. Darkness cripples all his activities and reduces him to a partial state of hibernation. The inability of the town-dweller to see in the dark constituted a grave difficulty in the training of troops for trench warfare, where to take prompt advantage of the slightest glimmer of light is a military asset of enormous importance. Possibly the troops now returning home may have learned their lesson so well that darkness will no longer be a serious bar to rural life—possibly, too, the born countryman may scarcely be conscious of the drawback—but since the population is so largely urban we are in entire agreement with Sir H. Rider Haggard, who, in a letter to the *Times* of Nov. 19th, ascribes the desertion of the rural districts in large part to their appalling darkness during the long winter months. If it is technically possible, there seems no conceivable reason why, in fairness to the rural dweller, the village street and the village house should not be as brightly lighted as those of the towns. If it is merely a question of distribution, the problem has long been solved in other countries by the overhead conduction of high-tension current. The plea of danger has been negatived by experience. No Swiss village is without its brilliant electric illumination, while every tenth house has its telephone, by means of which conversation can be carried on with neighbouring valleys which might take 10 or 12 hours to reach by rail or road. But Swiss boys, although no mean climbers of electric standards, are not electrocuted, and even birds perch unscathed. If it is a question of quantity of current and of resulting cost, then the towns might well spare some of their garish brilliancy to the villages. Natural water-power, as everyone knows, answers many questions about cost, but surely we need not stand with folded hands neglecting all things because one natural advantage is denied us. We do not know whether it would be possible to light country highways, but short of this the finger-posts at corners should be made easily readable by night as by day and all dangerous crossings illuminated. Some may hold that these are merely questions of convenience, but the effect of light on health is one that cannot be gainsaid. The winter gloom of day-time in Marylebone and Kensington, in Lancashire manufacturing centres, and on the dockyards of the Clyde must result in a general lowering of vitality which predisposes to disease—we are not referring to the artificial darkness of war-time, but to the climatic amenities of these islands. It is not direct sunlight alone which is beneficial; bright diffused light invigorates even when the sun itself is obscured. The "artificial sun" of the mercury-vapour lamp has been shown to take the place in part of the real orb. Brightly lighted play centres for town children will probably demonstrate the same truth. Something should be done, and done quickly, to remove the day-time gloom of our cities and the night-time gloom of our villages. They constitute one of the greatest impediments to healthy outdoor life in the long winter months. We commend the subject to the consideration of those who are planning central power-stations.

THE MEDICAL INSURANCE AGENCY.

A MEETING of the committee of the Medical Insurance Agency was held at 429, Strand, on Thursday, Nov. 21st, under the chairmanship of Dr. G. E. Haslip. The financial position was found to be quite favourable, the prosperity of the committee having been well maintained in the last year of the war, while promises of future development are sound. The committee decided, having regard to the funds at their disposal, their commitments on the one hand and their impending receipts on the other, that a further distribution of £500 should be made to medical charities. This is the same sum, it will be remembered, as was dealt with in the interim distribution in May of this year, the result being that the Medical Insurance Agency has been able in the fourth year of the war to give £1000 in aid of first-class medical charities while continuing rebates to their clients of a highly satisfactory nature. The second £500 was allocated as follows: Royal Medical Benevolent Fund, £100; Royal Medical Benevolent Fund Guild, £100; Epsom College Benevolent Fund, £100; Royal St. Ann's School, £100; War Emergency Fund, £50; Birmingham Medical Benevolent Society, £25; and the Royal Medical Benevolent Fund of Ireland, £25. As a result of this distribution the total of sums allocated to medical charities has reached £4405. In the course of the meeting the chairman stated the position that had arisen between two medical charities—the Royal Medical Benevolent Fund and Epsom College—in regard to difficulties arising over testamentary benefactions. When the exact distinction of bequests by will has been made doubtful between these two bodies by the wording

of the testator's wishes, legal trouble has arisen and much expense has been incurred for legal costs, all of which was a dead loss to one or other or both parties. On the suggestion of the Medical Insurance Agency a joint committee has now been formed comprising three representatives of each party, and it may be confidently hoped that the deliberations of this committee will lead to satisfactory arrangements. The chairman reported to the committee with great regret the death of one of their members, Major Betham Robinson, and the acting secretary of the agency was asked to express to Major Robinson's relatives the sympathy and the real sense of loss felt by the committee.

THE MICHELL CLARKE MEMORIAL FUND.

A STRONG Appeal Committee has been formed with the object of raising a fund to be entitled "The Michell Clarke Memorial Fund," and to be used in behalf of the Medical Library now controlled by the University of Bristol and the Bristol Medico-Chirurgical Society. The late Dr. John Michell Clarke was a distinguished native and citizen of Bristol, who for 30 years worked at the Bristol General Hospital as physician, investigator, and teacher; he was Pro-Vice-Chancellor of the University, as well as joint Professor of Medicine. His energies were largely devoted to the cause of medical education, and the Appeal Committee feel that his memory can be best perpetuated by identifying the Fund with that cause. One phase of higher medical education—to which, moreover, Michell Clarke attributed great importance—is the provision of the best medical literature for the use of practitioners and students. But the Bristol Medical Library, though serving the locality to the top of its powers, rests upon no specific endowment, and the provision of such, it is believed, would fulfil Michell Clarke's wishes. A sum of £2500 will be necessary. Mr. James Rafter, M.A., Registrar of the University, is acting as honorary treasurer, and subscriptions should be forwarded to him at the University, cheques being made payable to the "Michell Clark Memorial Fund."

THE ETIOLOGY OF OVERLAYING.

Dr. F. J. Waldo, coroner for the City of London and borough of Southwark, in his annual report to the corporation of the City, calls attention to the inquests held by him upon the bodies of children suffocated while in bed with their parents or others. These inquests were seven in number, verdicts of accidental death being returned in all cases and the fact of death being due to suffocation proved by post-mortem examination. Dr. Waldo makes a practice of ordering such examinations upon all occasions when suffocation has apparently taken place owing to the child not having been provided with a cot, and it is perfectly clear that he is right. Without post-mortem examination there can be no certainty that the child did not die from natural causes; while, in instances where there is evidence that the adult occupant or occupants of the bed were intoxicated when the death took place, an undeserved charge of manslaughter might follow. It is an opinion held by Dr. Waldo that the intoxication of parents is seldom the cause of infants being overlaid, and naturally it is a matter as to which proof is not always forthcoming. In this connexion, however, it may be pointed out that a post-mortem examination not having taken place when parents have been committed for trial for manslaughter, might lead to the acquittal of guilty persons, as counsel for the defence at their trial would hardly fail to notice the omission of an inquest and to take full advantage of it. It is satisfactory to note that the increased use of cots for their children at night by the humbler classes has led to a very appreciable diminution in the inquests held upon deaths ascribed to suffocation in bed. The number of inquests of this class in England and Wales declined from 1660 in 1904 and 1098 in 1914 to 585 in 1917.

A RETURN TO WHITE BREAD.

THERE is evidence, at all events from some quarters, that the bread supplied now is getting increasingly white in appearance. If that is so, the decisions of the Cabinet announced by the Food Controller in the House of Commons a week ago as to allowing a reduction in the percentage of flour to be abstracted from wheat are being acted upon. Mr. Clynes explained that this step had been taken as a result of the relief of the tonnage situation and because it would release approximately 18,000 tons of offal weekly for farmers, pig-keepers, and others to feed their animal stock, and a certain amount of barley. An economic necessity appears, therefore, to have led the Food Controller to revert to the old order of things in regard to the making of bread from wheat flour, which was alluded to by the Government's own scientific authorities, who, in an official statement issued to the public, said:—

> "We have become accustomed to eat bread made from the inner two-thirds of the wheat grain, the outer third having been given to animals. But at the present time it is important to use as much as possible of the grain for human food, so that wheat flour is ground to contain four-fifths or more of the whole grain. This is an advantage, not only because we get more food, but because the part of the grain which was formerly rejected contains valuable flesh-forming material and salts."

There is a contradiction here in theory or in action which will need further explanation.

FIRST-AID IN ORDINARY LIFE.

DURING the summer we reported briefly in these columns a series of lectures, delivered at the College of Ambulance by representative medical men, the purpose of which was to show the advantage to the community of first-aid on the farm, in the factory, and, generally, in mitigating the results of accidents to life and limb in daily life. In factories and workshops such provision is obligatory under the terms of Home Office regulations, but apart from organised industry, how few are the facilities provided for emergency treatment before the doctor's arrival, even though delay in their application may well make the difference between life and death. We heartily endorse, therefore, the plea of the St. John Ambulance Association that every encouragement should be given to those who desire to gain a competent knowledge of first-aid, home nursing, and hygiene, the Association expressing its willingness to hold classes wherever there is a demand for them. We should like, too, to emphasise the fact that with the cessation of hostilities the knowledge of first-aid and elementary nursing acquired by V.A.D.'s and thousands of others should not be cast off as a garment, but rather put to the gentler uses of peace.

MEMORANDUM ON FOOD AND SCURVY.

BY THE FOOD (WAR) COMMITTEE OF THE ROYAL SOCIETY.

IN view of the fact that outbreaks of scurvy have occurred at various times, both in this country, and abroad in His Majesty's Forces, and in order to guard against a recurrence of such outbreaks, especially at places far removed from sources of supply, the Royal Society Food (War) Committee have issued the following Memorandum, based chiefly upon investigations carried out at the Lister Institute:—

THE CAUSE AND PREVENTION OF SCURVY.

1. Scurvy, like beri-beri, is a "deficiency disease," and is due to the long-continued consumption of food lacking in an accessory food substance or vitamine. The view that scurvy is due to tainted food must be abandoned.

2. This vitamine is contained in a number of fresh foods: in largest amount in oranges, lemons, and fresh green vegetables; in considerable amount in roots and tubers, such as swedes, potatoes, &c.; and in small quantities in fresh meat and milk. It is deficient in all dried and preserved foods.

3. It is destroyed by prolonged heating, such as takes place during stewing. Thus, potatoes in stews would be devoid of vitamine, but if boiled rapidly will still contain some quantity. Alkalies rapidly destroy antiscorbutic properties. Soda should therefore not be added to the water in which vegetables are soaked or boiled.

4. Before the onset of definite symptoms of scurvy there is a period of debility and weakened resistance to disease. The occurrence of cases of debility in any body of troops without sufficient cause should at once direct the medical officer's attention to the sufficiency of the diet.

Prevention of Scurvy.

5. West Indian lime juice, as ordinarily prepared, is useless for the prevention of scurvy. Fresh limes have an antiscorbutic action, but their efficiency is only one-fourth that of lemons. The so-called "lime juice," by the regular administration of which scurvy was eliminated from the Navy during the first half of the nineteenth century, was really lemon juice obtained from the Mediterranean. The history of Arctic exploration affords numerous examples in which scurvy was prevented for long periods of time by the agency of lemon juice regularly taken. Nares's expedition of 1875, notorious for the serious outbreaks of scurvy encountered, was the first to be provisioned with "lime juice" prepared from West Indian limes. Orange juice is as effective as lemon juice.

6. Potatoes and root vegetables have a distinct value in the prevention of scurvy, much less, however, than green vegetables or fresh fruit juices. A daily ration of 14 oz. of potatoes, boiled rapidly but not stewed, will suffice to prevent scurvy.

7. Pulses, beans, peas, and lentils in the dried condition have no antiscorbutic properties. If, however, the dried seeds are soaked in water and are allowed to germinate for a short period, one or two days, they develop the antiscorbutic vitamine. At the same time these pulses are also rich in the vitamine which prevents beri-beri, and are, moreover, valuable foods.

The method adopted for germination is as follows. The beans, peas, or lentils are soaked in water at room temperature (60° F.) for 24 hours. The water is then drained away and, to permit germination, the soaked seeds are spread out in layers, not exceeding 2 to 3 inches in depth, and kept moist for a period of about 48 hours at ordinary room temperature (60° F.). They should not be allowed to dry after this operation, but should be cooked as rapidly as possible (lentils, 20 minutes; peas, 40 to 60 minutes).

8. The antiscorbutic value of fresh meat is very low in comparison with that of fresh vegetables and fruit. If fresh meat is consumed in large quantities, 2 to 4 lb. a day, scurvy will be prevented. Tinned and preserved meat possess no antiscorbutic value. Frozen meat, while more valuable than preserved meat, must be considered inferior to freshly killed meat in this respect.

Methods of Cooking.

9. The destruction of the antiscorbutic properties depends rather upon the time than the temperature employed. All foods, especially vegetable, should be cooked for as short a time as possible at boiling-point. Slow methods of cooking, such as stewing with meat or simmering below boiling-point, should be avoided. Potatoes should be plunged into boiling water and the boiling continued for 20 to 30 minutes after the boiling-point has again been reached. Frozen meat should be roasted when practicable.

The Memorandum closes with a summary of measures recommended for the prevention of scurvy when fresh vegetables are unobtainable: (*a*) The lime-juice ration should be replaced by lemon juice; the ration should be 1 oz. daily served with sugar. (*b*) Cooked germinated peas, beans, or lentils should form part of the regular daily ration. (*c*) Attention should be paid to the methods of cooking employed, as set forth under 9.

THE PARLIAMENTARY REPRESENTATION OF THE SCOTTISH UNIVERSITIES.—Professor William R. Smith requests us to intimate that he will address the graduates of the Scottish Universities at the Royal Institute of Public Health, London, to-day (Saturday) at 4 P.M.

Correspondence.

"Audi alteram partem."

DISPENSARY SUPERVISION IN PULMONARY TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—I can cordially endorse everything written in the article under this heading by Dr. G. Jessel published in your columns on Oct. 26th. This may possibly be the more valuable as the experience which endorses it is obtained in the county borough of Middlesbrough with a population of 126,000 in an area of 6¾ square miles against Wigan's 40 square miles. The same method of home treatment with dispensary attendance and constant nursing supervision has been in operation here for the last four years, and the nursing element is continually growing and still insufficient, although we have three dispensary nurses employed. Recently we have instituted monthly nursing reports on all insured cases, however well they are, with most valuable results. This has been specially demonstrated in controlling the tendency to deteriorating health in the two influenza epidemics. We have also recently added three weeks' holiday in a suitable locality, when needed, paid for by after-care scheme, which is really an essential in those stabilised, if home treatment is to be efficiently carried out. The result of this experiment was very interesting; at first it seemed rather a failure, but a review of the cases two months after demonstrated its unexpected value. The disappointment was due to the fact that only 50 per cent. of the cases sent away were immediately benefited; the unexpected and gratifying result was that in the two months' revision subsequent to their return 75 per cent. were benefited, and this in spite of the fact that we went through the first "flu" epidemic during the holiday period. As this result is rather opposed to sanatorium results the suggestions are very interesting.

There is one other matter suggested by Dr. Jessel's article. During the reconstruction period after the war, with its large housebuilding schemes, it would be worth while considering whether it would not be advisable, when so many of the houses in which the tuberculous live are so unsuitable for their residence, for the local authorities who are rebuilding to reserve certain houses in each area, to be let at a lower rental if necessary to those tuberculous families in need of other quarters, as one of the most economic expenditures in the control of tuberculosis. It is not suggested that these houses should be segregated, unless the local bodies were prepared to spend an extra sum on the beautifying of the area to overcome the natural tendency there would be to consider it a leper area, and so defeat its own ends. May I say that home treatment, to be properly carried out, needs a home, not a hovel, and tuberculosis does not require this more than other diseases.

For home treatment to be successful there must be constant supervision according to the requirements of the case, reasonable freedom from anxiety, and a possibility of removal to a sanatorium, when the extra rest there obtained is an essential consideration. In Middlesbrough the results are fully justifying the idea that the only real way in which tuberculosis can be controlled is by making home treatment and supervision the foundation-stone of the whole structure. Sanatoria, hospitals, and farm colonies should be only separate rooms in the structure for special use; home treatment and supervision must be the foundation of the whole.

I am, Sir, yours faithfully,

H. A. ELLIS,

Middlesbrough, Nov. 16th, 1918. Tuberculosis Medical Officer.

PS.—Since writing the above I have read Dr. F. E. Wynne's letter in your issue of Nov. 16th. Surely he hardly makes out a case. While admitting the failure in present methods of dealing with tuberculosis, as "vital statistics show no decline whatever, either in the incidence of tuberculosis or the mortality from this cause," he depreciates a method which has at least demonstrated that it has attained the supervision of 1615 cases where before only 1164 were supervised, or that a third of the cases were previously not supervised. At least home supervision does away with many present extravagant and irksome methods, which apparently, in Dr. Wynne's belief, are entirely useless. Whether home supervision and treatment

is the right path remains to be proved, and will in the very nature of things require about ten years to show results. My own, in spite of war food difficulties and influenza, show this year so far a reduction of 20 per cent. on the mortality of 1914, and the more serious cases are undoubtedly diminishing in the district. It is bad policy for those who have so far admitted failure to condemn a method before a reasonable test has been made. War should surely have taught us not to condemn new methods before trial where present procedures are not equal to the undertaking. I trust Dr. Jessel will continue and give us the results of his increased home supervision.

To the Editor of THE LANCET.

SIR,—Your issue of Nov. 16th contained an interesting letter from Dr. F. E. Wynne, medical officer of health of Wigan, on the subject of dispensary supervision in pulmonary tuberculosis. Dr. Wynne maintains that consumptives in Lancashire will not, or do not, carry out such common-sense hygienic methods as they have been taught to do. I have, of course, no knowledge of the county borough of Wigan, but as regards the administrative county as a whole I am convinced Dr. Wynne underrates the average intelligence of Lancashire men and women.

It is a mistake to take dispensary supervision or any other single item in a comprehensive scheme and expect the death-rate from tuberculosis to be much raised or lowered as a consequence of its adoption. In Lancashire, in 1917, no less than 256 persons died from pulmonary tuberculosis who had not been notified, 19 died before receipt of notification, and 433 within three months of notification. Such a reservoir of infection, coupled with other war conditions, makes a much smaller death-rate compared with pre-war years most unlikely, but surely every effort to enable persons suffering from open consumption to have a separate bedroom, as carried out so admirably by Dr. Jessel and the other county tuberculosis officers in the county areas under their charge, helps in the right direction and not in the wrong —I am, Sir, yours faithfully,

G. LISSANT COX,
Central Tuberculosis Officer, Lancashire County Council; Medical Adviser, Lancashire Insurance Committee.
County Offices, Preston, Nov. 25th, 1918.

TREATMENT OF INFLUENZA.

To the Editor of THE LANCET.

SIR,—Sir Thomas Horder's stimulating article upon the treatment of influenza in your issue of Nov. 23rd will, no doubt, have been read with interest by many of those who are engaged in dealing with the epidemic from the purely clinical side. He rightly points out that there are no reliable short cuts in the treatment of these cases, and emphasises the great importance of skilled nursing and efficient treatment on general lines, especially in the management of the more serious type of case. He speaks of the importance of "the promptness with which the general conduct of the case is established and the thoroughness with which it is carried out," and goes on to add that "every case of the disease treated upon sound principles is a contribution to preventive medicine." The value of such observations cannot be overestimated. Sir Thomas Horder's paper, however, would have been still more helpful if he could have formulated for us a workable scheme for the handling of the many serious cases amongst the poorer classes of the community. His remarks and suggestions about aerotherapy, hydrotherapy, poultices, cradling, inhalations, Gamgee jackets, hypodermic and intravenous medication, to say nothing of the turtle soup, show that he is thinking rather of the patient who is already surrounded by conditions which in themselves tend towards a favourable issue. What, however, are we to do with the serious cases occurring amidst surroundings which from the start are all against recovery? And I take it that these cases are in the majority. Many doctors have by this time realised the hopelessness of treating cases of influenzal pneumonia under such conditions. An abundance of fresh air has been almost unobtainable; efficient nursing in 19 cases out of 20 out of the question, and for those cases—and there have been many of them—situated in houses where the majority of the domestic circle have been laid aside even the elementary requirements of sick nursing have been absent. The harassed doctor has been able to do little more than pay a hurried daily call, prescribe medicine, feel the pulse, and with a word of encouragement pass on to his next patient. Although district nurses have been here and there available—and they have done splendid work under trying conditions—yet for many cases an occasional visit from a kindly neighbour has been all that has been possible. The civilian population has suffered severely, not so much because we have been unable to make up our minds as to the actual causative agent of the disease, or whether one should administer a dose of 10 million or 500 million dead influenza bacilli, or even because we have been unable to provide a definitely curative agent against the virus, but rather owing to the distress and misery caused by the apparent helplessness of the public health, Poor-law, and hospital authorities to do anything adequate to deal with a situation where nursing and care of acutely ill people have been an urgent need.

The difficulties, of course, have been great, but failure to cope with the problem has obviously been due to want of organisation rather than of beds, doctors, and nurses. The war has clearly demonstrated that in the hands of a central authority organisation can overcome everything, and the medical and nursing professions have been able to successfully meet situations of unparalleled difficulty. In one way, therefore, the epidemic has done good. It has proved the urgent need for an efficient State Medical Authority. The existence of such an authority would have made it possible for a clear-cut line of campaign to have been immediately instituted. It would have been possible for that authority to have at once ordered the closing of every hospital and infirmary bed to all but urgent cases. In this way wards could have been set apart and nurses set free for the care of large numbers of influenzal pneumonias. Under such conditions it would have been reasonably possible to attempt to carry out Sir Thomas Horder's most excellent principles of treatment and so give the patients a better chance, and at the same time to have saved many families from the distress and misery produced by attempting to look after acutely ill relatives under conditions that are all against recovery.

I am, Sir, yours faithfully,
Leeds, Nov. 25th, 1918. C. W. VINING, M.D.

PARLIAMENTARY REPRESENTATION OF DUBLIN UNIVERSITY.

To the Editor of THE LANCET.

SIR,—I wish to remind medical graduates of Dublin University that by recent legislation all graduates who register their names have the right to vote; the franchise is not, as heretofore, confined to holders of the higher degrees. In order to register, a graduate not already registered should send without delay to the Assistant Registrar of University Electors, Trinity College, Dublin: (1) his name in full; (2) his address; (3) the registration fee of £1; (4) a declaration that he, or she, is of the required age and a British subject. Women graduates have the same rights as men.

Sir Robert Woods, who received wide support at the last election, has announced his intention of contesting the vacant seat. If Dublin University is to return a medical man as one of its Members it is incumbent on medical graduates to register as voters at once. It is not necessary to impress on readers of THE LANCET the importance of returning an increased number of competent medical men to Parliament.

I am, Sir, yours faithfully,
Dublin, Nov. 25th, 1918. ROBERT J. ROWLETTE.

THE INTRAMUSCULAR ADMINISTRATION OF NOVARSENOBILLON.

To the Editor of THE LANCET.

SIR,—As the method which I have adopted of administering novarsenobillon intramuscularly appears to be practically painless, and as other practitioners may be interested, may I be allowed to state the technique employed? The successful and comparatively painless administration of novarsenobillon depends in the first place upon a satisfactory solvent being used for the drug. Many solvents and methods were tried at St. Thomas's Hospital, with the result that a solution of guaiacol in liquid glucose proved to be the most satisfactory. The solution is thus prepared:—

Guaiacol	1 part.
Liquid glucose	50 parts.
Water (recently sterilised)	to 100 parts.

The water and glucose are sterilised and the guaiacol is added when cold.

It is to be noted that the solution is prepared without the addition of any anæsthetising agent, such as stovaine or novocaine. Experiments made with higher percentages of both guaiacol and liquid glucose were found to be unsatisfactory.

There are many qualities of liquid glucose, varying in colour from dark brown to yellow, but the product used should be the pure substance, which is clear and colourless. Of this solvent, 10 to 20 minims are taken and the novarsenobillon powder is dissolved in it, which it readily does, even when the dose is as large as 0·75 g. With this amount of liquid the injection is made. This amount is very small, which is of great importance, as the least bulk of fluid possible should be injected into the tissues.

I do not consider the addition of a local anæsthetising agent necessary, for with intramuscular injections pain makes no appearance until several hours after giving the drug, and by that time the effect of a local anæsthetic has disappeared. If the injection is skilfully administered there is no pain at the time of administration and the insertion of the needle is not felt.

The method recommended is to take a 1 c.cm. tuberculin or intramuscular syringe fitted with a fine intramuscular needle. Separating the needle from the syringe and holding it between the thumb and forefinger, it is stabbed with a rapid movement of the wrist into the glutei in the upper and outer quadrant of the buttock, causing it to enter the tissues at right angles to the skin. The depth to which the needle is inserted—usually from three-quarters up to the hilt—can only be gauged by practice. The buttock should be carefully palpated beforehand to ascertain the best position for inserting the needle and the force requisite to drive the needle to the desired depth. When this has been done the syringe is fitted on to the needle, care being taken that the needle is kept stationary while it is in the tissues and while the plunger is being pushed down. The needle and syringe are then withdrawn as one, as rapidly as possible to prevent any solution remaining along the track of the needle. The buttock is then gently massaged for five minutes.

Although a few patients have complained of pain lasting for two or four hours this is exceptional. By this method I find that patients are spared the intense pain which often attends the administration of the drug with the solvents generally in use.

I am, Sir, yours faithfully,

THOS. ANWYL-DAVIES,

In charge of the Venereal Department, St. Thomas's Hospital.

13, Park-place, St. James's, S.W., Nov. 23rd, 1918.

SECURITY OF TENURE FOR MEDICAL OFFICERS OF HEALTH AND INSPECTORS OF NUISANCES.

To the Editor of THE LANCET.

SIR,—As the time is approaching when, I think, an application might be made to the Local Government Board for the issue of the Order referred to in the enclosed letters, I send you copies of the letters for publication.

I am, Sir, yours faithfully,

Nov. 23rd, 1918. PHILIP MAGNUS.

[ENCLOSURES.]

Local Government Board, Whitehall, S.W.1.
30th December, 1915.

MY DEAR MAGNUS,—In accordance with the decision of my predecessor, which was contained in his letter to you of February last, my Department have prepared an Order giving security of tenure to whole-time medical officers of health and inspectors of nuisances in the future.

I entirely agree with the decision at which Mr. Samuel arrived, and am strongly in favour of security of tenure for these officers, but I must confess that my own feeling is that the present is hardly the most appropriate time for the issue of such an Order, in view of the fact that so many of our best men have given up local work for service with the Army or Navy, and that the conditions are now quite abnormal.

Perhaps you would kindly let me know what your views are and whether in the circumstances you would see any objection to the issue of the Order being further postponed.—Yours sincerely,

(Sgd.) WALTER H. LONG.

Local Government Board, Whitehall, S.W.1,
7th January, 1916.

MY DEAR MAGNUS,—Many thanks for your letters with respect to the tenure of office of medical officers of health and inspectors of nuisances. I felt sure you would agree that there were good grounds for postponing the intended change.

I see no objection at all to your publishing our correspondence.

Yours sincerely,

(Sgd.) WALTER H. LONG.

I am very grateful to you for your most valuable and friendly cooperation.—W. H. L.

The War and After.

SUMMARY OF TOTAL WAR CASUALTIES.

WE gave last week Mr. Macpherson's statement to the House of Commons regarding the total British casualties, including those of Dominion and Indian troops, up to Nov. 10th. This referred to land warfare. The Secretary of the Admiralty has issued a corresponding statement regarding naval losses. From the outbreak of the war up to Nov. 11th last there was a total of 39,766 casualties in the Royal Navy and Royal Marines, excluding the Royal Naval Division (included in the War Office figures), but including the Royal Naval Air Service up to the end of last March. The figures also include a certain number of officers and men of the Mercantile Marine injured while serving on commissioned vessels. The total naval casualties are analysed as follows:—

Naval Losses.

	Officers.	Men.
Dead (including died from wounds and from other causes)	2,466	30,896
Wounded	806	4,378
Missing	15	32
Interned and prisoners of war	222	953
Total	3,508	36,258

In addition to these, 14,661 officers and men of British merchant ships and fishing vessels have lost their lives through enemy action, and 3295 others have been captured and detained in enemy countries as prisoners of war.

Canadian Losses.

An official statement gives the total casualties to Nov. 5th last in the Canadian Overseas Forces as 213,268:—

Killed in action	35,128	Missing	842
Died of wounds	12,048	Wounded	154,361
Died of disease	3,409	Prisoners of war	2,860
Presumed dead	4,620		213,268

American Losses.

In an interview given at Washington, General Peyton March gave the casualties during the war in the U.S.A. Army:—

Killed or died of wounds	36,154	Wounded	179,625
Died of disease	14,811	Prisoners	2,163
Deaths uncertified	2,204	Missing	1,160

Indian Casualties.

The total number of casualties among the Indian troops up to Sept. 30th last has been officially given as 101,439, viz.:—

	Killed.	Wounded.
In Mesopotamia	14,742	30,589
In France	6,900	16,380

THE CASUALTY LIST.

The following medical officers appear among the casualties announced since our last issue:—

Killed.

Capt. R. Clark, R.A.M.C., attached Hussars.

Died of Wounds.

Lieut.-Col. P. S. O'Reilly, C.M.G., R.A.M.C., qualified in Ireland in 1899, and joined R.A.M.C. shortly afterwards. He took part in the South African War, and at the time of his death was senior medical officer at the Royal Arsenal, Woolwich.

Died.

Capt. M. W. Miles, R.A.M.C., qualified in London in 1917, and thereupon joined up. He died in England of pneumonia following influenza.

Capt. E. D. Keane, R.A.M.C., was a student at Aberdeen University and qualified in 1901. He held appointments at the County Asylum, at Chalmers' Hospital, and at the Dispensary, Banff, and was in practice at Kensington at the time of joining the R.A.M.C.

Major W. S. MacDonell, Canadian A.M.C.

Capt. M. S. K. R. Rao, I.M.S.

Major G. G. Anderson, R.A.M.C.

Surgeon-Lieut. J. F. Howell, R.N.

Surgeon Sub-Lieut. J. D. Gear, R.N.V.R.

Wounded.

Capt. J. J. B. Edmond, R.A.M.C., attached K.R.R.C.

Capt. G. Robinson, R.A.M.C.

Lieut. W. H. Ross, R.A.M.C., attd. Devonshire Regiment.

Capt. A. W. Raymond, M.C., R.A.M.C., attd. Rifle Brigade.

Capt. Santokh Singh, I.M.S.

Capt. W. G. MacKenzie, M.C., R.A.M.C.

Previously Reported Wounded, now Reported not Wounded.

Capt. W. G. Shakespeare, R.A.M.C.

OBITUARY OF THE WAR.

JAMES MURRAY McLAGGAN, M.B., CH.B. ABERD.,

MILITARY CROSS,
CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain J. M. McLaggan, who was killed in action on Oct. 4th, was elder son of James McLaggan, of Torphins, Aberdeenshire. He was educated at Gordon's College, Aberdeen, and graduated M.B., Ch.B. at the University in July, 1913. He was then appointed house physician at the Royal Infirmary, and was holding this post when, at the outbreak of war, he received a commission in the R.A.M.C. After a period of service at Netley Hospital he was attached to the Royal Fusiliers, serving with his battalion in Egypt, Salonika, and France for three and a half years. At the battle of Loos he was awarded the Military Cross—

"For conspicuous gallantry and devotion to duty during the operations 27th to 30th September, 1915, when he attended to the wounded in the firing line under heavy shell and rifle fire. His coolness and skill undoubtedly saved many lives. For three days and four nights he worked incessantly with unflagging energy."

He was killed by a machine-gun sniper. The A.D.M.S. of the division writes: "Captain McLaggan had a very high sense of duty, and his constant thought was for the well-being of the men. The manner of his death was exactly like his life—with complete disregard of his personal safety he went to attend to his fallen C.O. when he himself fell a victim."

FRANK OSWALD SPENSLEY, M.R.C.S. ENG.,

CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain F. O. Spensley, who died at Weymouth on Oct. 23rd, at the age of 39 years, was youngest son of the late Rev. James Spensley, of Reeth, N. Yorks. Educated at Kingswood School, Bath, and at St. Thomas's Hospital, London, he held a house appointment at Lowestoft Hospital before being appointed in May, 1908, assistant medical officer to the Darenth Asylum. Four years later came his promotion to the senior post. He was keenly interested in the scheme of industrial training for the feeble-minded, and assisted wholeheartedly in making Darenth a success as an industrial colony. His paper read before the Medico-Psychological Association was noticed in our columns (THE LANCET, 1913, i., 711). Volunteering for active service on the outbreak of war, he was at first rejected on medical grounds, but received a commission in the R.A.M.C. in November, 1916, and served for a year with the Salonika Force, when he was invalided home. After working at Aldershot and at Wareham he was attached to the R.A.F. at Blandford, where he was at work until Oct. 22nd. On the following day he died of pneumonia at the Borden Military Hospital, Weymouth. Captain Spensley's constant thought, both at Darenth and at the camp, was for his patients, by whom he was much beloved. His chief at Darenth writes: "He had qualities which eminently fitted him for that branch of work—I mean a large sympathy and a keen interest in the lives of the patients. He was consequently very popular among them."

HUGH BERNARD GERMAN, M.R.C.S. ENG.,

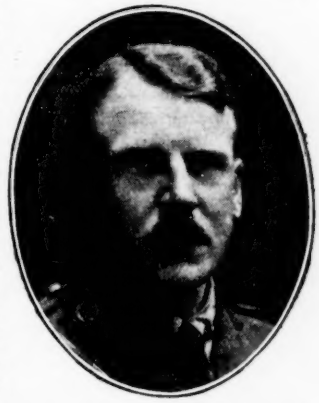
MILITARY CROSS,
MAJOR, ROYAL ARMY MEDICAL CORPS.

Major H. B. German, who was killed in action in France on Sept. 18th, was eldest son of the late George Alexander German, of Southsea. He was educated at Portsmouth Grammar School, where he was distinguished in games, and took his medical course at Guy's Hospital, London, qualifying in 1904. He then entered the Royal Navy and was serving on H.M.S. *Orontes* in the Mediterranean at the time of the Calabrian earthquake, when he was in one of the first relief parties which reached the scene of disaster. For his services on this occasion he received the Messina Medal and the Order of the Crown of Italy. In 1913 he went into private practice at Waltham Abbey, surrendering it in 1916 when offered a temporary commission as captain in the Royal Army Medical Corps. He was sent to France attached to the 17th Field Ambulance, was mentioned in despatches in 1917, and in November of the same year was awarded the Military Cross for gallantry in the field, to which he added a bar in March, 1918. He met his death while going to the succour of a wounded officer. His brother officers write of the esteem and respect in which Major German was held by all ranks. "He was fearless and untiring in his efforts for the wounded."

JAMES HARRIS CONNOLLY, M.D. EDIN., F.R.C.S. ENG.,

CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain J. H. Connolly, who died on active service on Oct. 23rd, was second son of James Connolly, of Putney. He was educated at the Royal Academical Institution and at Queen's College, Belfast, going on to Edinburgh University, where he qualified M.B., Ch.B. in 1902 and M.D. with honours four years later. During these years he acquired his surgical experience, which was considerable, at the Devonport and Chesterfield Hospitals. The next 18 months he spent at the Golden Square Throat Hospital, and his interest in special surgery thus aroused he took his F.R.C.S., and was appointed honorary assistant throat and ear surgeon to St. Bartholomew's Hospital, London, and to the Hackney Hospital for Children. He was securing a position as a consultant in this branch when, on the outbreak of war, he offered his services, and was at first placed in charge of wounded officers at the Royal Herbert Hospital, Woolwich. He was in Egypt for some months, but for the greater part of the four years was working at a C.C.S. in France, exposed to great climatic hardships. In March, 1917, he was invalided after a severe chill and later, having collapsed while operating, was found to have albuminuria. After six months at the Acheson Hospital in London he returned to France and died of exhaustion at the C.C.S., where he was surgeon-specialist. Captain Connolly's friends one and all write of his forgetfulness of self and devotion to duty. His work always took the first place with him and he was a very skilful surgeon. "He was too much wrapped up in his work to have a large circle of friends, but to those with whom he was intimate he was geniality itself."



CASUALTIES AMONG THE SONS OF MEDICAL MEN.

The following additional casualties among the sons of medical men are reported:—

Capt. H. P. D. Helm, R.A.F., late Border Regiment, died from illness contracted on active service, eldest son of Dr. R. D. Helm, of Carlisle.

Lieut. M. E. J. Moore, M.C., Royal Irish Rifles, died of wounds, only son of Dr. E. E. Moore, of Donegal Asylum, Letterkenny.

Capt. H. T. F. Russell, M.C., R.A.F., late Royal Welsh Fusiliers, killed in an aeroplane accident, third son of Dr. W. F. Russell, of Holyhead.

Lance-Corpl. T. P. Clark, Royal Fusiliers, killed in action, only surviving son of the late Dr. A. W. Clark, of Wisbech, Cambs.

Lieut.-Col. A. Thorp, D.S.O., R.A., killed in action, eldest surviving son of the late Dr. C. W. Thorp, of Todmorden, Lancs.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Licences in Dental Surgery were recently conferred upon 19 candidates (including two women) who have passed the requisite examinations and have complied with the necessary by-laws. The following are the names of the successful candidates:—

Douglas William Smale Adams and John Frederick Batsford, Guy's Hosp.; Isaac Myer Benischowitz, Middlesex and Royal Dental Hosps.; Iris Elizabeth Gardiner, Royal Free and National Dental Hosps.; Myer Garfinkel, Univ. Coll. and National Dental Hosps.; Mabel Francis Humby, Royal Free and Univ. Coll. Hosps.; John James and Elisha Clemens Keet, Guy's Hosp.; Frank Lawrence, Lond. Hosp.; Harold James Lyon and Amin Maher, Guy's Hosp.; Cornelis Hermanus Oliver, Middlesex and Royal Dental Hosps.; Charles Lindley Donald Pasmore, Guy's Hosp.; Clifford Thomas Plimsoll, Charing Cross and Royal Dental Hosps.; Bertram Adolphe Siedle, Univ. Coll. and National Dental Hosps.; and William Wallace Harold Truscott, William Henry Turner, and Richard Murray Underwood, Guy's Hosp.

UNIVERSITY OF LONDON.—At examinations held recently the following candidates were successful:—

THIRD (M.B., B.S.) EXAMINATION FOR MEDICAL DEGREES.

Loveday Shackell Banes, St. Mary's Hosp. and Lond. Sch. of Med. for Women; Irene Bastow, Lond. Sch. of Med. for Women; Stanley Batchelor, Lond. Hosp.; Alethea Josephine Bolton, Birm. Univ.; Philip Crawford Conran, Middlesex Hosp.; Hilda Margaret Denton and Susan Alfreda Finch, Lond. Sch. of Med. for Women; Humphrey Leonard George Foxell, Univ. Coll. Hosp.; Maud Gazdar, Lond. Sch. of Med. for Women; Johan Coenraad Gie, Guy's Hosp.; Lionel Bernard Goldschmidt, King's Coll. Hosp.; Charles Hamilton Gould and Walter Henry Grace, Guy's Hosp.; Blanche Aspasie Marion Henderson, Charing Cross Hosp.; William Broke Heywood-Waddington, St. Bart.'s Hosp.; Robert Hamer Hodges, King's Coll. Hosp.; Edwin Augustus Hutton-Attenborough, London Hosp.; Muriel Elsie Landau, Lond. Sch. of Med. for Women; Janet McAllister McGill, St. Mary's Hosp. and Lond. Sch. of Med. for Women; Maurice William Holt Miles, St. Thomas's Hosp.; Ludlow Murcott Moody, King's Coll. Hosp.; Percival George Quinton and Walter Murad Abdul Rahman, Univ. Coll. Hosp.; Olive Rendel, Lond. Sch. of Med. for Women (honours, distinguished in pathology); Enid Eleanora Sanger-Davies, Lond. Sch. of Med. for Women; Stanley Nahum Sennett, London Hosp.; Joseph Harold Sheldon, King's Coll. Hosp.; Aubrey Leonard Telling, Leeds Univ.; and Gladys Millicent Rutland Webster, Lond. Sch. of Med. for Women.

B.S. EXAMINATION.

Thomas Henry Sanderson-Wells, Middlesex Hosp.

The following candidates have passed in one of the two groups of subjects:—

Group I.—Simon Cyril de Silva Wijeyeratne, Univ. Coll. Hosp.; Alice Muriel Griffiths and Mary Isabella Hounsfield, Lond. Sch. of Med. for Women; Francis Reginald Law, Leeds Univ.; Annie Lloyd, Lond. Sch. of Med. for Women; Thomas Dawson Pratt, Leeds Univ.; and Henry Bret Russell, St. Thomas's Hosp.

Group II.—Charles Yarrow Eccles, St. Thomas's Hosp.; Albert William Holgate, Univ. Coll. Hosp.; Ifor Hughes Lloyd, Westminster Hosp.; Alice Lloyd Lloyd-Williams, St. Mary's Hosp. and Lond. Sch. of Med. for Women; Adeline Mabel Matland and Enid Maud Pfeil, Lond. Sch. of Med. for Women; and Montagu Cecil Polhill, Univ. Coll. Hosp.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—M. Girgis (Sect. II.), Univ. Coll. Hosp.; D. M. Howard (Sects. I. and II.), St. Mary's Hosp.; and T. T. Tiplady (Sect. I.), Durham.

Medicine.—D. M. Howard (Sects. I. and II.), St. Mary's Hosp.; S. Robinson, St. Thomas's Hosp.; S. H. Robinson (Sects. I. and II.), Guy's Hosp.; and G. E. Spero (Sect. I.), London Hosp.

Forensic Medicine.—D. M. Howard, St. Mary's Hosp.; W. A. Jones, Glasgow; S. H. Robinson, Guy's Hosp.; and C. de B. Thomson, Middlesex Hosp.

Midwifery.—R. A. D. J. Bernhardt, Middlesex Hosp.; J. Crawford, Royal Free Hosp.; D. M. Howard, St. Mary's Hosp.; T. T. Tiplady, Durham; and J. Yates, Manchester.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: M. Girgis and D. M. Howard.

ROYAL INSTITUTION OF GREAT BRITAIN, ALBEMARLE-STREET, PICCADILLY, W.—A general monthly meeting of the members will be held on Monday, Dec. 2nd, at 5 P.M.

ROYAL MEDICAL BENEVOLENT FUND.—At a meeting of the committee, held on Nov. 8th, 30 cases were considered and £249 15*s.* voted to 24 of the applicants. The following is a summary of some of the cases relieved:—

L.R.C.P. & S. Irel., aged 34, unmarried, and practised in India, where he contracted fever, and as a ship's surgeon. Suffered from insomnia and had to discontinue work owing to the morphia habit. Now reported cured, and wishes to start a practice. Quite without means. Voted £5.—Widow, aged 47, of L.R.C.P. & S. Edin. who practised at Walthamstow and died in 1916, and was an annuitant of the Fund. Applicant left entirely without means, and finds it difficult to obtain suitable employment. Relieved three times, £18. Voted £12 in 12 instalments.—M.R.C.S. Eng., aged 49, married, and practised at Birmingham. Suffering from disseminated sclerosis. Has no income beyond 10*s.* a week from friends and 5*s.* a week earned by his wife by making shell jewellery. Rent £6 a year. One son, aged 11, a foundation scholar at Epsom. Relieved twice, £44. Voted £26 in 12 instalments.—Widow, aged 43, of L.R.C.P. & S. Edin. who practised in Ireland and died in 1912. Applicant obtained a living by keeping a sweet shop, but owing to the war had to give it up. Now earns 10*s.* a week by sewing. Has three children, ages 13-18. The eldest in the Army, from whom she receives 3*s.* 6*d.* a week, and a daughter aged 16, who earns 12*s.* a week. Recommended by the Edinburgh Branch of the Guild. Relieved twice, £25. Voted £15 in three instalments.—Daughter, aged 66, of L.F.P.S. Glasg. who practised at Widnes and died in 1883. Applicant has two pensions bringing in £40 a year and has two unfurnished rooms rent free. Owing to the high cost of living unable to manage. Relieved five times, £25. Voted £5.—Widow, aged 55, of M.B. Aberd. who practised at Watlington and died in 1912. Owing to ill-health unable to work. Sister-in-law allows 10*s.* a week. Rent 5*s.* a week. Relieved three times, £34. Voted £12 in 12 instalments.—Widow, aged 37, of L.R.C.P. Edin. who practised at Edinburgh and died in 1916. Applicant was left with very limited means with four children, now aged 4-12 years. Tries to supplement her income by taking in boarders. Relieved twice, £27. Voted £15 in 12 instalments.—Daughters, aged 56 and 44, of L.S.A. Lond. who practised in London and died in 1903. Both are chronic invalids and unable to work, and their joint income is less than £70 a year. Relieved ten times, £119. Voted £18 in 12 instalments.—Widow, aged 81, of M.D. Lond. who practised in London and died in 1895. Suffers from chronic rheumatism. Total income £44 a year. Relieved ten times, £65. Voted £10 in two instalments.—Widow, aged 73, of L.R.C.P. Edin. who practised in East London and died in 1913. Owing to long illness of husband was left quite unprovided for. Has three daughters, but none able to help. Brother who used to help her now dead. Only income a pension from a City Company. Relieved five times, £60. Voted £12 in 12 instalments.—Widow, aged 55, of M.D. Edin. who practised at Newcastle and died in 1896. Was left with one daughter entirely unprovided for. Has recently fractured her leg, which has prevented her from working. Receives a little help from daughter. Relieved four times, £48. Voted £12 in 12 instalments.—Daughters, aged 67 and 58, of M.R.C.S. Eng. who practised in Cornwall and died in 1873. Endeavour to make a living by taking in paying guests, but cannot make sufficient to pay expenses. Relieved nine times, £154. Voted £18 in 12 instalments.

Subscriptions may be sent to the acting honorary treasurer, Dr. Samuel West, at 11, Chandos-street, Cavendish-square, London, W. 1.

CENTRAL MIDWIVES BOARD.—A special meeting of the Central Midwives Board was held at Queen Anne's Gate-buildings, Westminster, on Nov. 21st, with Sir Francis H. Champneys in the chair. Certain midwives were struck off the Roll, the following charges, amongst others, having been brought forward:—

Being in attendance at a confinement, and the case being one of abortion, the midwife did not explain that the attendance of a registered medical practitioner was required, as provided by Rule E. 21 (2), and the case being as aforesaid she neglected to hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to a medical practitioner or to an approved institution, as required by Rule E. 21.—A midwife when attending her patients did not wear a clean dress of washable material, as required by Rule E. 2; she did not take and record the pulse and temperature of her patients at each visit, as required by Rule E. 14; she did not enter her records of pulse and temperature in a note-book or on a chart carefully preserved, as required by Rule E. 14, and did not keep her register of cases as required by Rule E. 24. Medical aid having been sought for a patient, the midwife neglected to notify the local supervising authority thereof, as required by Rule E. 22 (1) (*a*); having been in contact with a patient suffering from puerperal fever, she neglected to notify the local supervising authority thereof, as required by Rule E. 6. A child suffering from inflammation of, and discharge from, the eyes, the midwife did not explain that the case was one in which the attendance of a registered medical practitioner was required, as provided by Rule E. 21 (5). A midwife neglecting to disinfect her hands and forearms on each occasion before touching the generative organs of the patient, as required by Rule E. 4.; neglecting to wash the patient's external parts with soap and water and then to swab them with an efficient antiseptic solution on the occasions required by Rule E. 8, and attempting to assist delivery of the placenta by traction on the cord, being thereby guilty of malpractice within the meaning of Section 8 (2) of the Midwives Act, 1902. A midwife being

drunk and incapable of giving proper attention to the patient; neglecting to examine the placenta and membranes and to satisfy herself that they had been completely removed, as required by Rule E. 10. That medical advice on account of serious skin eruptions having been sought for the infant children of three women upon whom she was in attendance as a midwife, the midwife neglected to notify the local supervising authority thereof, as required by Rule E. 22 (1) (a). That when called to a confinement the midwife did not take with her the appliances and antiseptics required by Rule E. 3. In disregard of Rule E. 12 the midwife discontinued her attendance at a time when the condition of the child was not normal.

At a meeting held on the same day a letter was read from the Local Government Board asking the Central Midwives Board to consider the advisability of framing a new rule in terms similar to the corresponding rule of the Central Midwives Board for Scotland, which required a midwife to notify the local supervising authority in the following case: "Artificial feeding: Whenever under Rule 19 (b) she has advised the substitution of artificial feeding for breast feeding." The Board decided that the Local Government Board be informed that the Central Midwives Board, having considered the question of framing a new rule in terms similar to the corresponding rule of the Central Midwives Board for Scotland, is prepared to submit such a rule for the approval of the Privy Council.—A letter was considered from the secretary of the Four Boroughs Maternity Clinics bringing to the notice of the Board a scheme for the payment of midwives for antenatal visiting. The Board directed that the secretary of the Four Boroughs Maternity Clinics be thanked for her communication, of which the Board takes note. The Board fears that any scheme by which additional payment is made to midwives for bringing patients to a clinic can hardly fail to be utilised for the notification of pregnancy, and therefore to prevent early engagement of midwives. It is strongly in favour, however, of promoting the coöperation of midwives in antenatal and maternity care.—A letter was considered from the secretary of the National Poor-Law Officers' Association asking the Board to amend Rule C. 1 (2) (b) by deleting the words "and maintaining a resident physician or house surgeon and a matron or superintendent nurse." The Board decided that the secretary of the National Poor-Law Officers' Association be informed that the Board is not prepared to amend Rule C. 1 (2) (b) in the sense suggested by his letter.

THE INSURANCE OF DISABLED MEN.—The Government has decided to apply the Workmen's Compensation Act to disabled sailors, soldiers, and airmen returning to civilian employment, it being understood that the State bears any increased charge incurred for compensation which arises out of the disability. The ordinary rates of insurance are to rule, the Government reimbursing the loss, if any, to the insurance company or to the large firm which undertakes the insurance of its own workpeople. All men in receipt of disability pensions from the Ministry of Pensions are regarded as disabled men for the purposes of the scheme. The details of the scheme are still to be published.

DEARTH OF WOMEN DOCTORS.—A scarcity of women medical assistants for maternity and child-welfare schemes is recorded by the Leeds Health Committee. There were only two applications in response to an advertisement for a woman medical assistant. Only one of the applicants was deemed suitable, but she failed to attend for an interview. The medical officer reported that Dr. Amelia Sharp had intimated her willingness to undertake a certain amount of work in connexion with infant-welfare centres, and the committee has agreed to ask her to attend at three afternoon clinics a week and to pay her at the rate of 1 guinea per clinic. The medical officer has been empowered to make such arrangements with other medical practitioners of carrying on the work at the centres temporarily at a similar rate of remuneration.

CLERICAL, MEDICAL, AND GENERAL LIFE ASSURANCE SOCIETY.—The report of this society presented at the ninety-fourth annual general meeting, which was held at the Society's office, 15, St. James's-square, S.W. 1, on Nov. 1st, showed a satisfactory development of the business and of financial progress during the year ending June 30th. The new assurances were 808, for a total sum of £1,122,937. The premium income was £476,311, showing an increase of £7966, and the gross interest income rose by £7072 to £292,412. The claims by death, including £43,199 directly due to war, amounted to £323,633, which is £36,851 below the total recorded last year. The surplus income of the year's transactions amounted to £217,150, and the life assurance fund was thereby raised to £6,312,720. The society has resumed its pre-war practice of granting whole-world and unconditional policies on the lives of civilians at the ordinary rate, and it also grants whole-world and unconditional policies at extra premiums on the lives of naval and military officers serving at home and abroad.

THE SERVICES.

ROYAL AIR FORCE.

A LIST of some 200 officers of different ranks in the Naval and Army Medical Services who have received temporary commissions in the Royal Air Force (Medical Branch) will appear in a subsequent issue of THE LANCET.

ROYAL NAVAL MEDICAL SERVICE.

To be temporary Surgeon Lieutenants: J. Nicol, A. W. McRorie.

ARMY MEDICAL SERVICE.

Col. J. Meek, C.B., is placed on retired pay.

ROYAL ARMY MEDICAL CORPS.

To be temporary Colonels whilst specially employed: Major G. R. Murray, R.A.M.C., T.F.; Temp. Lieut.-Col. E. F. Buzzard (Captain, R.A.M.C., T.F.).

Major R. N. Hunt relinquishes the temporary rank of Lieutenant-Colonel on re-posting.

Temp. Lieut.-Col. T. D. Acland (Major and Brevet Lieutenant-Colonel, R.A.M.C., T.F.) relinquishes his temporary commission on re-posting.

Capt. A. D. Fraser relinquishes the acting rank of Lieutenant-Colonel and reverts to the acting rank of Major.

Major W. Davis to be acting Lieutenant-Colonel whilst in command of a Medical Unit.

Temp. Capt. W. F. Neil and Capt. C. J. O'Reilly relinquish the acting rank of Major on re-posting.

To be acting Majors: Capts. J. Y. Moore, W. F. Christie; Temp. Capts. S. J. L. Lindeman, W. G. Waugh, S. W. McLellan, A. J. M. Wright, R. E. Cree, N. S. Carmichael.

Capt. (acting Major) A. G. Wells to draw the pay and allowances of his acting rank whilst specially employed.

Temporary Captains to be acting Majors whilst specially employed: C. S. Gideon, R. W. Sutherland, L. J. Spence.

The undermentioned late temporary Captains are granted the honorary rank of Captain: M. M. Townsend, T. E. Hammond, G. Holroyd.

Temp. Hon. Lieut. J. R. Beaven to be temporary honorary Captain.

Officers relinquishing their commissions: Temp. Major B. G. Elliott (on account of ill-health contracted on active service, and is granted the honorary rank of Major); Temp. Capts. (acting Major) W. P. Ker, N. C. Rogers, C. F. Curtis, H. Dearden (on account of ill-health caused by wounds, and is granted the honorary rank of Captain), W. Russell, D. G. M. Munro, J. W. O. van Millingen (on account of ill-health contracted on active service, and is granted the honorary rank of Captain), W. H. Bennett (on account of ill-health contracted on active service, and is granted the honorary rank of Captain), J. St. P. Knight, L. C. Smith (on appointment to R.A.F.), W. Allan (on account of ill-health contracted on active service, and is granted the honorary rank of Captain), T. B. Carlyon (on account of ill-health, and is granted the honorary rank of Captain).

SPECIAL RESERVE OF OFFICERS.

Capt. T. F. Corkill to be acting Major.

Capt. J. A. L. Wilson to be acting Major whilst specially employed.

Capt. J. MacD. Clark relinquishes his commission on account of ill-health contracted on active service, and is granted the honorary rank of Captain.

To be Lieutenants:—L. Hardy. From University of London Contingent, O.T.C.: E. A. Clegg, A. Eidinow, S. V. Goldhurst, G. G. Havers, W. S. Herman, C. P. Hines, C. G. J. Rayner, M. S. Thomson, J. Whittingdale. From Birmingham University Contingent, O.T.C.: E. E. R. Spurway.

TERRITORIAL FORCE.

Lieutenant-Colonels, from the Sanitary Service, to be Lieutenant-Colonels: P. C. Smith, J. R. Kaye, A. K. Chalmers, D. Smart, and C. Averill.

The undermentioned Majors to be acting Lieutenant-Colonels whilst specially employed: W. H. M. Telling, W. Thompson, W. M. Stevens, P. R. Griffiths, B. Riddell, G. N. Biggs (to remain seconded), D. J. Graham, H. A. Ballance, H. B. Roderick, and L. Humphry.

Capt. (Brevet Major) E. H. Fenwick to be acting Lieutenant-Colonel whilst specially employed.

Captains to be acting Majors while specially employed: R. C. Elsworth, W. J. Greer, T. M. Thomas, E. Reid, J. Henderson, H. J Gorrie, F. S. Carson, (Brevet Major) A. G. R. Foulerton, (Temp. Major) A. A. McWhan, J. H. Cobb, A. J. Jex-Blake, J. H. Thursfield, J. R. Levack, R. Ritson, J. Everidge, M. G. Foster, H. A. Cookson, R. Whittington, W. H. Brailey, A. L. Whitehead, L. R. Braithwaite, R. A. Veale, C. W. Vining, A. H. Horsfall (to remain seconded).

Lieut. C. H. Gibb to be Captain.

Restored to the establishment: Major (Brevet Lieut.-Col.) T. D. Acland; Capts. N. S. Finzi, A. McLennan.

TERRITORIAL FORCE RESERVE.

Capt. H. G. Butterfield relinquishes his commission on account of ill-health, and is granted the honorary rank of Captain.

Capt. A. L. McCully, from Attached to Units other than Medical Units, to be Captain.

INDIAN MEDICAL SERVICE.

Cols. C. C. Manifold and P. Hehir to be Major-Generals.

Hon. Temp. Lieut. Behramji Pestonji Sabawala to be honorary temporary Captain.

THE British Red Cross Society have conferred the honour of honorary life membership upon Mr. John Hatton, director of the baths of Bath, in recognition of the work done at the bathing establishment for wounded and invalided soldiers of all ranks. Immediately after the outbreak of war the Bath Corporation placed the facilities of the city's bathing establishment at the disposal of the War Office and Admiralty.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

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TUESDAY, NOV. 26TH.

THE General Medical Council commenced its winter session at its offices, Hallam-street, W., Sir DONALD MACALISTER, the President, being in the chair.

Presidential Address.

Sir DONALD MACALISTER opened his address with an expression of thanksgiving for the assured peace, and of grateful acknowledgment to those who by their devotion and sacrifice had redeemed civilisation from ruin. He continued:—

Not least we recognise with pride the great part performed by the men and women of our profession, both at home and abroad, in preserving the health of the Forces and of the people during the struggle. In the King's words, they have made a "notable contribution to the common welfare," "fearlessly exposing themselves to danger in their task of mercy." The profession as a whole is the nobler for their nobility, and will face the grave tasks of reconstruction with fresh courage, informed by their example and experience.

Sir Donald MacAlister went on to mourn the loss to the Council in the death of Mr. Meredith Townsend, who joined the Council last year, and of his former colleagues, Mr. Brudenell Carter and Dr. Robert Saundby, each of whom had given many years of valued service before retirement. He reported the death, in advanced age, of Mr. James Robertson, Registrar of the Branch Council for Scotland. He regretted the absence of two members of the Council—Sir Frederick Taylor and Professor Symington—owing to ill-health.

The Effects of the War and Reconstruction.

The effects of the war, which were still felt by the medical profession, were then referred to.

The strain upon medical men in civil practice, already severe enough, has been increased by the prevalence of epidemic illness. There is good hope, he said, that this strain will speedily be relieved by the release of medical officers from military service at the rate of some hundreds every month. The Professional Committees in Great Britain, which, with the able guidance of members of this Council, have so effectively aided the Government in recruiting for the medical services during the war, are coöperating with the authorities in solving the scarcely less difficult problems of demobilisation and resettlement. In particular, it has been arranged that the release of teachers in our medical schools and hospitals shall have special consideration. The influx of students returned from active service, with a view to the early completion of their professional course, makes it urgent that the sadly depleted staffs of skilled instructors should be reinforced without delay.

Sir Donald MacAlister then referred to the census of medical students which was completed in June, recapitulating the figures which have already appeared in our columns (THE LANCET, July 27th, p. 113, August 31st, p. 308). On the basis of these figures he had suggested to the Minister of National Service that, so far as the immediate requirements for junior students were concerned, it was unnecessary to extend beyond the original term—namely, July 31st, 1918—the instruction conferring exemption from military service on first-year men. This suggestion had been adopted. Sir Auckland Geddes had now, he added, become President of the Local Government Board, retaining the direction of the National Service Ministry for the present, and it was gratifying to the medical profession that during the period of transition and rebuilding the responsible administrator should be a registered medical practitioner of high distinction as a teacher and an organiser.

The number of newly qualified practitioners would this year be below the average, notwithstanding the steps taken to recall senior students from the Army to the medical schools. Somewhat tardy measures had been adopted to maintain the supply of senior dental students, but so far the qualified dentists added to the Dentists' Register had been few. The number attending the schools of dentistry with a view to qualification was also very small indeed. The prospect of a considerable addition to the ranks of qualified dentists, plainly required to meet immediate wants, was not encouraging. The Report of the Departmental Committee on the Dentists Act, which he had hoped might be before the Council this session, had not yet appeared. The problem the Committee was set to discuss did not become simpler with the rapid growth of the national demand for healthier conditions. A solution, Sir Donald MacAlister remarked, becomes every day more necessary.

Ministry of Health.—Other Legislative Measures.

Regarding the proposals for a Ministry of Health, he said:—

The Lord President has been moved to forward, for the observations of the Council, the text of a Bill which proposes to establish a Ministry of Health for England and Wales and a Board of Health for Scotland for the exercise of powers with respect to health and local government. The Bill has been read a first time in the House of Commons, but will not be further proceeded with until the new Parliament meets. I suggest that the Council should first consider *in camerâ* the manner in which it may with most advantage conduct the discussion of the Bill, with a view to formulating such observations thereon as it may wish to submit to the Lord President. The Bill, it will be found, is rather an enabling than an enacting measure. Certain medical functions of other departments are forthwith transferred to the new authority. Others may be transferred by Order in Council. Time will be given for the public discussion of such Orders before they take effect, and it is obvious that in many cases the terms of the Order may be of cardinal importance for medical science and practice. The Bill as it stands contains little that explicitly affects this Council, though I observe that it is made the duty of the Minister of Health to take steps for the effective carrying out of measures conducive to the health of the people, including "the training of persons engaged in health service." It should, I think, be made clear whether this phrase would or would not cover the functions exercisable by the Privy Council and this Council in relation to medical and dental education, to public health diplomas, to rules framed by the Central Midwives Boards, and the like. I am advised that it would not; but the Council will, no doubt, consider the point to be of some importance.

Other legislative measures were briefly alluded to:—

The Midwives Acts for Scotland and Ireland, passed during the war as urgently necessary in the public interest, have now been supplemented by an Act amending the English Act of 1902. The amendments tend to harmonise the three laws and to fill up lacunæ in the latter Act which experience of its administration had disclosed. In it provision is at length made for the remuneration of English practitioners called in to deal with emergencies arising in the practice of certified midwives. The Central Midwives Board for Ireland has framed rules for governing such practice in that country. The Privy Council, in accordance with the Irish Act and with the new English Act, has submitted the rules to the Executive Committee for comment. They follow, in the main, the pattern of the Scottish Board's rules, which have been already approved by the Council.

Certain Bills have been before Parliament dealing with the grave question of venereal disease and its prevention. A Joint Committee of both Houses has been considering them in their bearing on the important Act passed last year. You will remember that under its provisions the practice of unqualified persons professing to treat these diseases was legally prohibited in certain areas. The Bills in question propose to extend the prohibition to all parts of the country, and to impose penalties on unqualified persons who publicly advertise themselves as prepared to treat or to supply "cures" for this class of maladies. As your President I was asked to give evidence before the Committee, and testified to the various aspects of the matter brought to the notice of the Council by Dr. Langley Browne's Unqualified Practice Committee and otherwise; and to the enactments of the Overseas Dominions respecting unqualified practice in general, as extracted from the Council's minutes. Although the Bills will not proceed this session of the Council, I understand the evidence given will be printed, and that the Committee will probably be reconstituted and report to the next Parliament.

Examination in General Education.—Training in Preventive Medicine.

The President then went on to record the progress made by the English Board of Education with the elaboration of its scheme for a general school examination to take the place of the multiple examinations in general education with which teachers and scholars have too long been burdened. Dr. Mackay, on behalf of the Education Committee, is charged with a report on the subject. Meanwhile the four Scottish Universities had received from His Majesty in Council a new Ordinance which establishes a common Entrance Board, empowered to accept the leaving certificates of the Scotch Education Department as the normal qualification for admission to the universities in all faculties. This would liberate the Faculty of Medicine from the obligation, hitherto imposed upon it by Ordinance, to accept a lower standard of preliminary education than that required for degrees in arts or science. "I am," he said, "sanguine enough to believe that the so-called 'Junior' Preliminary Examinations for students of medicine will cease to be recognised in Scotland before they are extinct elsewhere." The large and indeed embarrassing affluence of students much below the age of 18 who were now entering the medical schools made the change more than ever expedient on educational grounds.

Training in preventive medicine had been considered during the recess by the members of the Education Committee, and proposals would be submitted. He called attention to the remarkable Memorandum on Medical Education in England, addressed to the President of the Board of Education by Sir George Newman, setting forth the changes that have gradually been made in the duties and responsibilities of the medical practitioner with

reference to public health and public administration, and the grounds for requiring that a corresponding change should be made in the manner and matter of his training for their fulfilment.

In forecasting the programme of the session Sir Donald MacAlister expressed gratification that complaints of laxity in granting certificates had practically ceased, a testimony to the efficacy of the warning notices issued.

Appointment of Officers.

The names of Mr. Robert Howden, Dr. David Hepburn, Sir Bertram C. A. Windle, Dr. N. P. Walker, Mr. H. J. Waring, Mr. J. W. B. Hodsdon, and Sir Arthur Chance were added to the Anatomy Acts Committee.

Dr. Norman Moore was appointed treasurer in succession to Sir Frederick Taylor, retired, and Dr. Norman Walker chairman of the Business Committee.

WEDNESDAY, NOV. 27TH.

The Council proceeded to the consideration of penal cases. At the conclusion of the sitting reports of the Public Health, Examination, and Education Committees were received and entered on the minutes, as well as a letter from the Privy Council asking for comment upon the Ministries of Health Bill, 1918.

URBAN VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING OCTOBER, 1918.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious disease it appears that the number of persons reported to be suffering from one or other of the ten diseases specified in the table was equal to an annual rate of 5·9 per 1000 of the population, estimated at 4,026,901 persons; in the three preceding months the rates had been 3·5, 3·2, and 4·7 per 1000. Among the metropolitan boroughs the lowest rates from these notified diseases were recorded in Chelsea, the City of Westminster, St. Marylebone, Hampstead, and the City of London; and the highest rates in Hackney, Bethnal Green, Stepney, Southwark, and Bermondsey. The prevalence of scarlet fever was 60 per cent. higher than in the preceding month; this disease was proportionately most prevalent in Hammersmith, Shoreditch, Bethnal Green, Stepney, Southwark, and Bermondsey. The Metropolitan Asylums Hospitals contained 1184 scarlet fever patients at the end of the month, against 753, 690, and 931 at the end of the three preceding months; the weekly admissions averaged 178, against 105, 101, and 164 in the three preceding months. The prevalence of diphtheria was about 50 per cent. higher than in September; the greatest proportional prevalence of this disease was recorded in Stoke Newington, Hackney, Bethnal Green, Stepney, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 918, 886, and 1051 at the end of the three preceding months, had further increased to 1155 at the end of October; the weekly admissions averaged 163, against 122, 107, and 166 in the three preceding months. The prevalence of enteric fever was nearly double that in each of the two preceding months; of the 50 cases notified during October, 6 belonged to Islington, 6 to Deptford, 4 each to Bethnal Green and Hackney, and 3 each to Paddington, Kensington, Hammersmith, and Camberwell. There were 56 cases of enteric fever under treatment in the Metropolitan Asylums Hospitals at the end of the month, against 23, 32, and 43 at the end of the three preceding months; the weekly admissions averaged 9, against 6 in each of the two preceding months. Erysipelas was proportionally most prevalent in Islington, Hackney, Bethnal Green, Stepney, Southwark, Wandsworth, and Camberwell. The 12 cases of puerperal fever notified during the month included 3 in Southwark and 2 each in Shoreditch and Wandsworth. Of the 14 cases of cerebro-spinal meningitis 4 belonged to Stepney and 2 to Lewisham, and 4 of the 11 cases of poliomyelitis were notified in Islington.

The mortality statistics in the table relate to the deaths of civilians belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased had previously resided. During the five weeks ended Nov. 2nd the deaths of 10,559 London residents were registered, equal to an annual rate of 27·3 per 1000; in the three preceding months the rates had been 14·8, 10·1, and 11·4 per 1000. The death-rates ranged from 16·5 in Hampstead, 19·6 in the City of Westminster, 21·2 in Hammersmith, 21·3 in Chelsea, and 22·2 in Fulham, to 34·9 in Hackney, 35·0 in Stoke Newington, 35·3 in Battersea, 36·0 in Woolwich, and 38·2 in St. Pancras. The 10,559 deaths from all causes included 334 which were referred to the principal infectious diseases, and included 22 from measles, 24 from scarlet fever, 90 from diphtheria, 17 from whooping-cough, 10 from enteric fever, and 171 from infantile diarrhœa. Among the metropolitan boroughs the lowest death-rates from these diseases were recorded in Chelsea, Hampstead, Finsbury, Wandsworth, and Lewisham; and the highest in Stoke Newington, Hackney, Bethnal Green, and Greenwich. The 22 deaths from measles were 27 below the average number in the corresponding period of the five preceding years, and included 6 in St. Pancras, 3 in Lewisham, and 2 each in St. Marylebone and Battersea. The 24 fatal cases of scarlet fever were 6 above the average, and included 6 belonging to Bethnal Green, 4 to Southwark, and 3 to Islington. The 90 deaths attributed to diphtheria were 18 in excess of the average, and included 22 in Hackney, 6 each to Stoke Newington, Stepney, Lambeth, Wandsworth, and Woolwich, and 5 to Southwark. The deaths from whooping-cough numbered 17, and showed a decline of 18 from the average; of these, 4 belonged to Camberwell and

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING OCTOBER, 1918.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated civil population, 1917.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.								
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.	Deaths from all causes.	Death-rate per 1000 living.
LONDON	4,026,901	—	1031	937	—	50	—	12	214	14	11	2269	5·9	—	22	24	90	17	10	171	334	0·9	10559	27·3
West Districts:																								
Paddington	122,507	—	32	22	—	3	—	—	4	—	—	61	5·2	—	—	1	1	1	1	3	7	0·6	291	24·8
Kensington	151,535	—	19	23	—	3	—	1	6	1	—	53	3·6	—	—	1	2	1	—	10	14	1·0	329	22·6
Hammersmith	114,962	—	40	11	—	3	—	—	2	—	—	56	5·1	—	—	—	—	1	—	6	7	0·6	234	21·2
Fulham	145,186	—	18	21	—	1	—	1	5	1	1	48	3·4	—	1	—	1	—	1	8	11	0·8	309	22·2
Chelsea	57,368	—	8	5	—	—	—	—	3	—	—	16	2·9	—	—	—	1	—	—	—	1	0·2	117	21·3
City of Westminster	122,046	—	4	8	—	2	—	—	1	—	2	17	1·5	—	1	—	—	—	—	8	9	0·8	229	19·6
North Districts:																								
St. Marylebone	92,796	—	12	9	—	1	—	—	4	—	—	26	2·9	—	2	—	1	—	—	3	6	0·7	211	23·7
Hampstead	75,649	—	4	13	—	1	—	—	2	1	—	21	2·9	—	—	—	2	—	—	—	2	0·3	120	16·5
St. Pancras	186,600	—	52	43	—	2	—	—	5	1	1	104	5·8	—	6	2	3	1	—	9	21	1·2	683	38·2
Islington	297,102	—	76	55	—	6	—	—	14	—	4	155	5·4	—	1	3	4	3	2	11	24	0·8	890	31·2
Stoke Newington	47,426	—	9	19	—	—	—	—	1	—	—	29	6·4	—	—	—	6	—	—	2	8	1·8	159	35·0
Hackney	196,598	—	45	133	—	4	—	1	12	—	1	196	10·4	—	—	2	22	1	—	6	31	1·6	658	34·9
Central Districts:																								
Holborn	35,303	—	3	10	—	1	—	—	1	—	—	15	4·4	—	—	—	—	1	2	1	4	1·2	103	30·4
Finsbury	68,011	—	8	13	—	—	—	—	4	—	—	25	3·8	—	1	—	—	—	—	1	2	0·3	194	29·7
City of London	16,138	—	1	3	—	—	—	—	—	—	—	4	2·6	—	—	—	—	—	—	—	—	—	41	26·5
East Districts:																								
Shoreditch	89,675	—	39	18	—	—	—	2	7	—	—	66	7·7	—	—	—	—	—	—	10	10	1·2	247	28·7
Bethnal Green	107,362	—	81	36	—	4	—	—	18	—	—	139	13·5	—	—	6	2	—	—	7	15	1·5	302	29·3
Stepney	232,010	—	70	98	—	—	—	—	15	4	1	188	8·4	—	1	—	6	—	—	14	21	0·9	585	26·3
Poplar	143,443	—	34	35	—	2	—	1	9	1	—	82	6·0	—	1	—	2	—	—	8	11	0·8	451	32·8
South Districts:																								
Southwark	167,936	—	107	41	—	—	—	3	25	—	—	176	10·9	—	—	4	5	1	—	8	18	1·1	385	23·9
Bermondsey	107,635	—	51	35	—	1	—	—	8	—	1	96	9·3	—	—	—	2	1	—	8	11	1·1	260	25·2
Lambeth	272,038	—	79	46	—	1	—	—	11	1	—	138	5·3	—	1	1	6	—	—	9	17	0·7	603	23·1
Battersea	150,023	—	18	20	—	—	—	—	5	—	—	43	3·0	—	2	1	2	1	—	4	10	0·7	515	35·8
Wandsworth	300,787	—	73	41	—	2	—	2	18	1	—	137	4·7	—	1	—	6	1	1	8	17	0·6	684	23·7
Camberwell	239,461	—	57	60	—	3	—	—	20	—	—	140	6·1	—	1	2	3	4	—	11	21	0·9	573	25·0
Deptford	103,527	—	22	22	—	6	—	—	5	—	—	55	5·5	—	—	—	2	—	—	4	6	0·6	244	24·6
Greenwich	90,440	—	20	26	—	2	—	—	2	—	—	50	5·8	—	—	—	3	—	2	7	12	1·4	288	33·2
Lewisham	161,405	—	24	29	—	—	—	1	3	2	—	59	3·8	—	3	—	2	—	—	2	7	0·4	398	25·7
Woolwich	131,942	—	25	42	—	1	—	—	4	1	—	73	5·8	—	—	1	6	—	1	3	11	0·9	456	36·0
Port of London	—	—	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

3 to Islington. The 10 fatal cases of enteric fever were one less than the average number, and included 2 each in Islington, Holborn, and Greenwich. The 171 deaths from infantile diarrhœa were no fewer than 256 below the average; this disease was proportionately most fatal in Kensington, the City of Westminster, Shoreditch, Bethnal Green, Bermondsey, and Greenwich. In conclusion, it may be stated that the aggregate mortality from these principal infectious diseases in London during October was 45 per cent. below the average.

(Week ended Nov. 23rd, 1918.)

English and Welsh Towns.—In the 96 English and Welsh towns, with an aggregate civil population estimated at 16,500,000 persons, the annual rate of mortality, which had been 43·8 and 38·7 per 1000 in the two preceding weeks, further declined to 38·3 per 1000. In London, with a population slightly exceeding 4,000,000 persons, the death-rate was 36·8 or 7·2 per 1000 below that recorded in the previous week; among the remaining towns the rates ranged from 11·8 in Wallasey, 12·9 in Portsmouth, and 13·3 in Gloucester, to 71·1 in Walsall, 74·6 in Nottingham, 76·9 in Stockport, 78·8 in Dewsbury, and 80·7 in West Bromwich. The principal epidemic diseases caused 207 deaths, which corresponded to an annual rate of 0·7 per 1000, and included 60 from infantile diarrhœa, 53 from diphtheria, 44 from measles, 25 from whooping-cough, 18 from scarlet fever, and 7 from enteric fever. Whooping-cough caused a death-rate of 1·4 in Blackburn and 1·5 in Preston, and measles of 1·7 in Wolverhampton and 3·6 in Walsall. The deaths from influenza numbered 5106, against 5916 in the preceding week, and included 1178 in London, 311 in Manchester, 280 in Birmingham, 207 in Nottingham, 164 in Sheffield, 163 in Leeds and 121 in Bradford. The 1149 cases of scarlet fever and 1062 of diphtheria under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital were 22 and 24 below the respective numbers remaining at the end of the previous week. The causes of 96 deaths in the 96 towns were uncertified, of which 17 were registered in Birmingham, 13 in Nottingham, 8 in South Shields, and 6 in West Bromwich.

Scotch Towns.—In the 16 largest Scotch towns, with an aggregate population estimated at nearly 2,500,000 persons, the annual rate of mortality was 24·3 per 1000, against 27·0 and 23·9 per 1000 in the two preceding weeks. Of the 1121 deaths from all causes, 29 were classified to influenza, which was also stated as a contributory cause in 252 deaths classified to other diseases; in the previous week these numbers were 46 and 331 respectively. The 502 deaths in Glasgow corresponded to an annual rate of 23·5 per 1000, and included 7 from diphtheria, 6 from whooping-cough, 4 from infantile diarrhœa, and 1 from scarlet fever. The 208 deaths in Edinburgh were equal to a rate of 32·5 per 1000, and included 5 from whooping-cough, 2 each from scarlet fever and infantile diarrhœa, and 1 from diphtheria.

Irish Towns.—The 244 deaths in Dublin corresponded to an annual rate of 31·9, or 13·7 per 1000 below that recorded in the previous week, and included 67 from influenza and 1 from infantile diarrhœa. The 490 deaths in Belfast were equal to a rate of 65·0 per 1000, and included 2 from infantile diarrhœa.

EDITORIAL NOTICE.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Communications, Letters, &c., to the Editor have been received from—

A.—Capt. G. K. Aubrey, late R.A.M.C.; Mr. J. H. Allan, Liverpool; Col. J. G. Adami, A.D.M.S.; Miss Lena Ashwell, Lond.; Messrs. Allen and Hanburys, Lond.

B.—Capt. T. G. Brown, R.A.M.C.; Board of Education, Lond.; Mrs. S. H. Burns, Dublin; Dr. G. Blacker, Lond.; Messrs. Burroughs Wellcome and Co., Lond.; Dr. M. F. Boulenger, Dartford; Mrs. G. C. Brownson, Bristol; British Museum (Natural History), Lond., Director of; Lady Barrett, Lond.

C.—Dr. H. Chick, Lond.; Mr. P. C. Cowan, D.Sc., Dublin; Capt. C. M. Craig, R.A.M.C.; Dr. G. L. Cox, Preston; Clerical, Medical, and General Life Assurance Society, Lond.

D.—Mr. H. Dickinson, Lond.; Dr. R. Donaldson, Reading; Lieut.-Col. J. F. Donegan, C.B., R.A.M.C.(R.); Mr. L. Doncaster.

E.—Major-General G. J. H. Evatt, C.B.

F.—Food (War) Committee, Royal Society, Lond.; Dr. R. F. Fox, Lond.; Dr. H. French, Lond.; Fiji Legislative Council, Medical Dept. of.

G.—Dr. J. O. Gavronsky, Lond.; Dr. A. G. Gibson, Oxford.

H.—Capt. C. W. Hutt, R.A.M.C.; Capt. J. A. Hadfield, R.A.M.C.; Mr. W. B. Hardy, Lond.

I.—Insurance Committee for the County of London; Incorporated Institute of Hygiene, Lond.

J.—Mr. M. H. Judge, Lond.; Dr. G. Jessel, Wigan.

L.—Dr. A. E. T. Longhurst, Chandler's Ford; Local Government Board, Lond.; Liquid Air and Rescue Syndicate, Lond.; Dr. R. E. Lord, Colwyn Bay; Major F. W. Lewis, R.A.M.C.(T.)

M.—Mr. J. S. Macalpine, Manchester; Sir Philip Magnus, M.P., Lond.; Medical Research Committee, Lond., Sec. of; Dr. W. C. Minchin, Herstmonceux.

N.—National Baby Council Week, Lond., Sec. of.

O.—Mr. F. H. Oates, Lond.; Mrs. O'Reilly, West Wellow.

P.—Capt. A. Patrick, R.A.M.C.; Major J. Phillips, R.A.M.C.; Penal Reform League, Lond.

Q.—Mr. J. H. Quastel, Reading.

R.—Miss M. F. Rutherfoord, Lond.; Royal Society of Arts, Lond.; Mr. D. D. Robertson, Lond.; Royal Society of Medicine, Lond.; Reading Pathological Society, Sec. of; Royal Institution of Great Britain, Lond.; Dr. R. J. Rowlette, Dublin; Mr. P. B Roth

S.—Prof. J. W. Simpson, C.M.G., Lond.; Dr. G. A. Sutherland, Lond.; Capt. J. L. Stoddard, M.C., U.S.A.; Society of Apothecaries of London; Prof. J. W. W. Stephens, Lond.

T.—Dr. A. H. Thompson, Lond.; Dr. A. B. M. Thomson, Pietermaritzburg; Dr. J. Tatham, Oxted.

V.—Dr. C. W. Vining, Leeds.

W.—Dr. F. P. Weber, Lond.; Dr. L. Williams, Lond.; Mr. C. H. Walker, Bristol.

Y.—Dr. R. A. Young, Lond.

Communications relating to editorial business should be addressed exclusively to The Editor of THE LANCET, 423, Strand, London, W.C. 2

Appointments.

RUSENBEKER, Dr., has been appointed Assistant Medical Officer at the City Hospitals of the Sheffield Corporation Health Committee.

STEWART, A. G., Lieutenant-Colonel, to the command of Paddington Military Hospital.

Vacancies.

For further information refer to the advertisement columns.

Barnstaple, North Devon Infirmary.—H.S. £150.
Birkenhead Borough Hospital.—Jun. H.S. £170.
Birkenhead Union.—Res. Asst. M.O. £300.
Birmingham City, Pensioners' Hospital.—M.O. £500.
Bournemouth, Crag Head Military Hospital.—H.S. £200.
Bridgend, Glamorgan County Council.—Temp Asst. M.O. 6 gs. p.w.
Bury St. Edmunds, Suffolk Hospital, Ampton Hall.—Res. M.O. £400.
Colchester, Essex County Hospital.—Female Jun. Res. M.O. £350.
Dorchester, Dorset County Council Education Committee.—School Dentist. £350.
Dorset County Council.—Female Temp. Asst. M.O. £400.
Dumfries and Galloway Royal Infirmary.—Res. H.S. £150.
Halifax County Borough Education Committee.—School M.O. £500.
Hampstead General and North-West London Hospital.—H.S. and H.P. £200.
Hospital for Consumption and Diseases of the Chest, Brompton.—H.P. 30 gs.
London County Mental Hospital, Essex.—Temp. Asst. M.O. 7 gs. a week.
London Female Guardian Society.—M.O. 35 gs.
Manchester, Baguley Sanatorium.—Med. Supt. £550.
Ministry of Pensions.—Res M.O. for Allerton Tower Home of Recovery, Liverpool.
Northampton General Hospital.—Jun. H.S. £150.
Nottingham General Hospital.—Female H.P. and H.S. £250.
Oxford, Radcliffe Infirmary and County Hospital.—H.P. £200.
Paisley Corporation Infectious Diseases Hospital.—Resident. £250.
Rochdale Infirmary and Dispensary.—Sen. H.S. £300.
Royal College of Physicians, Pall Mall East.—Milroy Lecturer.
Royal Free Hospital, Gray's Inn-road, W.C.—Female Medical and Gynæcological Registrar.
St. Bartholomew's Hospital.—Res. Anæs. £80.
St. Marylebone Health Society.—M.O. Also Asst. M.O.
Samaritan Free Hospital for Women.—Registrar. £50.
Sheffield Royal Infirmary.—Two H.S.'s. £150.
Shrewsbury Dispensary, 42, St. John's-hill, Shrewsbury.—Locum M.O.
Southampton, Shirley Warren Infirmary.—Res. Asst. M.O. £250.
Victoria Hospital for Children, Chelsea, S.W.—Sen. Res. M.O. £250.
Wigan Infirmary.—Sen. H.S. £250.
Wolverhampton and Staffordshire General Hospital.—H.S. £200.

Births, Marriages, and Deaths.

BIRTHS

CHARTRES.—On Nov. 24th, at Dodbrook Manor, Devon, the wife of Lieutenant-Colonel E. Acheson Chartres, R.A.M.C., of a son.

HARE.—On Nov. 23rd, at Cheltenham, the wife of Captain (acting Major) W. T. Hare, M.C., R.A.M.C., of a son.

SMITH.—On Nov. 24th, at Queen's-drive, Mossley-hill, Liverpool, the wife of Captain George F. R. Smith, R.A.M.C.(T.F.), of a daughter.

WOODSEND.—On Nov. 21st, at East Bridgeford Manor, Notts, the wife of R. N. Woodsend, M.B., B.S., Catterick, Yorks, Captain, R.A.M.C., of a son.

MARRIAGES.

HUGHES—MAINWARING.—On Nov. 23rd, at St. Clement Danes Church, London, Captain Frank Mainwaring Hughes, R.A.M.C. (T.F.) (Legion d'Honneur, Croix de Chevalier), to Mary, elder daughter of Mr. and Mrs. Frederick Hope Mainwaring, of Northfleet, Kent.

LARGE—COWAN.—On Nov. 25th, at St. Paul's Church, Edinburgh, Lieutenant-Colonel Stanley Dermott Large, D.S.O., M.C., R.A.M.C., to Violet Muriel Elise (Mona), youngest daughter of David Cowan, Esq., J.P., M.Inst.C.E., of Coulport, Cove, Dumbartonshire, and Abernethy, Perthshire.

PETERS—BENNETT.—On Nov. 21st, at St. John's Church, Cambridge-square, W., by the Rev. H. F. S. Adams, vicar, Haydn Peters, Captain, R.A.M.C., to Violet Mona, daughter of the late Mr. Justice T. R. Bennett, of Pietermaritzburg, Natal. South African papers please copy.

DEATHS.

GARDINER.—On Nov. 20th, at Mount Adon Park, Lordship-lane, Dulwich, Bruce Hubert John Gardiner, M.D.

HOPE.—On Nov. 21st, at Fernley Hotel, Bath, from pneumonia contracted when doing National Service work, James William Hope, F.R.C.P. Edin., D.P.H., late Principal Medical Officer and Commissioner of Public Health, Western Australia.

JAMES.—On Nov. 16th, at Upper Holloway, London, of pneumonia following influenza, M. B. James, M.B., Ch.B., aged 49 years.

MILES.—On Nov. 25th, at Pinfold-road, Streatham, S.W., of pneumonia following influenza, Maurice W. Holt Miles, Captain, R.A.M.C. (late), S.R., aged 25.

O'REILLY.—On Nov. 18th, at Holmwood, North Park, Eltham, Lieutenant-Colonel P. S. O'Reilly, C.M.G., R.A.M.C., aged 41 years.

REID.—On Nov. 18th, suddenly, James More Reid, Lieutenant-Colonel, R.A.M.C., aged 62.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.1.
MEETINGS OF SECTIONS.

Tuesday, Dec. 3rd.

PATHOLOGY (Hon. Secretaries—Gordon W. Goodhart, J. A. Murray): at 5.30 P.M.
Discussion on "The Pathology of Gas Gangrene."
It is hoped that the following will speak:—Prof. Weinberg (Paris), Major J. W. McNee, Dr. McIntosh, Dr. Henry, and Dr. Bulloch.

Wednesday, Dec. 4th.

SURGERY (Hon. Secretaries—V. Warren Low, Cyril A. R. Nitch): at 5.30 P.M.
Papers:
Lieut.-Col. Percy Sargent, D.S.O., R.A.M.C.: The Closure of Cavities in Bone.
To be followed by a discussion in which the following gentlemen will take part:—Major Oswald Shields, R.A.M.C., Capt. Simmonds, R.A.M.C., Mr. E. Gillespie, F.R.C.S., Capt. Z. Mennell, R.A.M.C.(T.) Major John Robert Lee, M.D., B.S., R.A.M.C.: Compound Fractures of the Femur in its Upper Third, and demonstration of new Thigh and Arm Splints.

Thursday, Dec. 5th.

OBSTETRICS AND GYNÆCOLOGY (Hon. Secretaries—Comyns Berkeley, J. S. Fairbairn): at 8 P.M.
Short Communications:
Dr. Drummond Robinson: A Case of Paraplegia in a Pregnant Woman.
Mr. Clifford White: On Sections of Kidney removed by Operation from Two Cases of Puerperal Suppression of Urine.
Specimens will be shown by—
The President (Mr. J. D. Malcolm): An Unusual Concretion in a Fibroid.
Dr. Drummond Robinson: (1) A Skiagram of Foreign Body in the Gravid Uterus; (2) Uterus showing changes taking place as the result of Procidentia.
Mr. T. G. Stevens: Foreign Bodies in the Bladder.

Friday, Dec. 6th.

LARYNGOLOGY (Hon. Secretaries—Frank A. Rose, Irwin Moore): at 4 P.M.
Discussion on "Dilatation of the Œsophagus without Anatomical Stenosis," to be opened by Dr. Brown Kelly and Dr. William Hill.

ANÆSTHETICS.
Discussion on "The Present Position of Spinal Anæsthesia," to be opened by Dr. F. S. Rood.
N.B.—A résumé of Dr. Rood's paper will be in the Library for reference a week before the meeting.
Will Members please note that abstracts of papers to be read at meetings are placed in the Library for reference a week before the meeting at which they are to be read.

SURGERY.—Members of the Section of Surgery are specially invited to attend the above discussion.

The Royal Society of Medicine keeps open house for R.A.M.C. men and M.O.'s of the Dominions and Allies. The principal hospitals in the metropolis admit medical officers to their operations, lectures, &c. Particulars on application to the Secretary at 1, Wimpole-street, London, W.1.

MEDICAL SOCIETY OF LONDON, 11, Chandos-st., Cavendish-sq., W.
MONDAY, Dec. 2nd.—8.30 P.M., Discussion on Reconstruction in Medical Education and Practice, to be introduced by Col. H. J. Waring, R.A.M.C.(T.)

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.
WEDNESDAY, Dec. 4th.—4.30 P.M., Paper:—Mr. B. S. Rowntree: Housing after the War.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.
MONDAY, Dec. 2nd.—2 P.M., Medical and Surgical Clinics. X Rays Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.
TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Arthur Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M. Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear Dr. Pernet: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Arthur Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.
THURSDAY, Dec. 5th.—5 P.M., Chesterfield Lecture:—Dr. M. Dockrell: The Papular Eruptions.

ROYAL INSTITUTE OF PUBLIC HEALTH, in the Lecture Hall of the Institute, 37, Russell-square, W.C.
Course of Lectures on Public Health Problems under War and After-war Conditions (each Lecture will be followed by a Discussion):—
WEDNESDAY, Dec. 4th.—4 P.M., Lecture IX.:—Prof. E. W. Hope: The Rôle of the Ports in the Protection of the Health of the Nation.

Notes, Short Comments, and Answers to Correspondents.

THE CARE OF THE DISABLED.

Sir John Collie was to have read a paper on the care of pensioners and disabled combatants in relation to national health and wealth at the Royal Institute of Public Health on Nov. 21st, with Mr. John Hodge in the chair. Neither was able to keep his engagement, and the paper was read in truncated form by Major Basil Rhodes, who indicated the magnitude of the task before the Ministry, since 70,000 surgical and medical cases had already passed through its hands. But wounds and injuries, Sir John Collie said, did not constitute the chief difficulty, which lay in the mental effects of their injuries upon the pensioners. On the credit side of the nation's account, however, must be set the improvement in physique of men who but for military training would have been stunted in growth. It was obviously the duty of the nation to provide an adequate medical service for men who had risked life and health for their country, but it was proving very difficult to keep pace with their requirements. The paper laid stress on the need for the adequate treatment of neurasthenic and shell shock cases, for spinal injuries, and orthopædic cases in general, and for the tuberculous.

COLONIAL HEALTH REPORTS.

Weihaiwei.—In his report for 1917, recently received at the Colonial Office, Mr. R. F. Johnston, Administrator, writes:—

There were very few cases of epidemic disease in the Territory, which maintains its reputation as one of the healthiest districts on the coast of China. A considerable number of cases of dysentery occurred among both Europeans and Chinese, and although it is true that some of these cases were among non-residents who had been attacked by the disease before their arrival in Weihaiwei, there is reason to believe that the outbreak is to some extent traceable to unsatisfactory sanitary conditions both on the mainland and on the island. Steps are being taken to remedy these. ..... I am at present drawing up a scheme for the introduction into the island of market gardening and fruit culture on a fairly large scale. It is proposed to lease garden-lots to approved tenants on very stringent conditions, whereby the Government sanitary authorities will be enabled to exercise strict control over the methods of cultivation, and thereby ensure that the local market will be provided with regular and ample supplies of sound fruit and vegetables. Those who know how readily disease is conveyed in China through the medium of vegetable produce grown and retailed under insanitary conditions will realise the enormous benefit that the proper working of the proposed scheme will confer upon residents in Weihaiwei.

It was feared that the opening of the War Office Labour Depôt would be detrimental to the health of the territory, especially as it was known that the very advantageous terms offered by the British Government would attract large numbers of underfed coolies from those districts of Chili which, as a result of the great floods, were stricken by both famine and disease. It is satisfactory to report, however, that the health statistics of the territory seem to have been in no way affected by the influx of labourers. Much credit for this is due to the depôt authorities who successfully isolated all cases of contagious disease within the limits of the depôt itself. In the hospital at Port Edward 7572 out-patients and 253 in-patients were treated, and the number of operations performed was 258. In the new hospital at Wen-ch'uan-t'ang 2749 new cases were treated and the total number of attendances was 4715. At the Island Hospital there were 5193 attendances, as compared with 6225 in 1916. The decrease in the number of patients is due to the dwindling of the population. The island has long ceased to be the commercial centre of the territory, and the majority of the inhabitants have migrated to the mainland. Opium-smoking in the Territory is forbidden under legal penalties. The only persons who are allowed to consume the drug in any form are those who have been given licences to do so after examination by a Government medical officer. At the end of 1917 there were 46 licensed smokers, but there is not the least doubt that the number of opium-smokers is much larger than the number of licence-holders would indicate. The highest temperature recorded in 1917 was 95° F. in June, the lowest 8° F. in January. Rain or snow fell on 73 days, the fall for the year being 33·28 inches; the average rainfall for 17 years has been 28·38 inches.

LAMED.

To the Editor of THE LANCET.

SIR,—There must be many, like myself, with good arms and one good leg. I should feel much obliged if any of your readers can say where a really good self-propelled venicle can be procured which can be worked by the three limbs mentioned. Of course, it must be able to climb moderate hills to be of much use.—I am, Sir, yours faithfully,

Nov. 22nd, 1918. "LAMED."

WOMEN AND A MINISTRY OF HEALTH.

AT a public meeting organised by the National Baby Week Council, and held at the Armitage Hall on Nov. 25th, Lady Barrett, M.D., proposed a resolution to the effect—

"That the organised services of women should be secured for the Ministry of Health as civil servants in the Ministry and in an advisory capacity, and a direct channel of communication between the women in the homes and the Ministry should be established."

We should, she contended, have no great results from such a Ministry unless based upon the needs of those most concerned in its operations. Schemes for a complete midwifery or antenatal service drawn up without the aid of women would end in failure. Proper recreation must be provided in the home. The manifestations of joy are the manifestations of health; mothers especially required real joy in their lives, and its realisation required the coöperation of men and women. The spread of venereal disease among girls of 13 to 16 years Lady Barrett attributed in large measure to faulty training and bad environment; here again the need was for more joy in their lives. On the advisory councils of the Ministry women should have large representation, while some of the executive officers at headquarters should be women. The resolution was passed unanimously.

PRECAUTIONS AGAINST INFLUENZA IN FRENCH SCHOOLS.

THE Prefect of the Seine, on the advice of various hygienic authorities, has issued for the guidance of directors of schools in Paris and the contiguous departments the following scheme of measures for dealing with the influenza epidemic:—

1° Supprimer toutes les réunions dans les locaux scolaires.

2° Faire procéder à des enquêtes par les soins des directeurs et directrices sur les motifs d'absence des élèves; transmettre sans retard, au secrétariat de l'inspection médicale des écoles, les résultats de ces enquêtes; éliminer, lors de la visite quotidienne de propreté, tout enfant qui paraîtra présenter des symptômes d'indisposition et le faire reconduire à sa famille en conseillant à celle-ci de recourir sans aucun retard à un médecin.

3° Conseiller aux familles de garder chez elles leurs enfants lorsqu'ils paraissent souffrants.

4° Evincer les frères et sœurs des malades. A cet effet, les directeurs et directrices doivent prévenir leurs collègues des écoles fréquentées par ces frères et sœurs chaque fois que des élèves de leurs propres établissements leur sont signalés comme atteints de grippe.

5° Faire pratiquer des lavages fréquents des parquets et tables de classe à l'aide d'une solution à base soit d'eau de javel, soit de créoline, soit de formol ou d'anodorine.

6° Ne pas licencier les écoles en totalité, mais licencier pour une quinzaine de jours toute classe dans laquelle les trois quarts des élèves sont absents pour cause de grippe; toutefois, il appartient aux médecins inspecteurs des écoles de proposer *exceptionnellement* le licenciement dans les cas qui leur paraîtront particulièrement graves.

7° Conseiller l'antisepsie des fosses nasales à l'aide de quelques gouttes d'huile de vaseline goménolée ou d'une solution au collargol.

Gomenol, it may be added, is a proprietary French remedy, stated to be obtained from a plant of the myrtle tribe, and taking the place of such familiar preparations as menthol and eucalyptol.

BOOKS FOR REFERENCE.

Burdett's Hospitals and Charities, 1918, being the Year Book of Philanthropy and the Hospital Annual, which has just made its twenty-ninth appearance (London: The Scientific Press. Pp. 922. 12*s.* 6*d.* net), maintains its record for accuracy and convenience of reference, though the index is still vexatiously placed in the middle instead of at one or other end of the book. The title-page states quite truthfully that the book is an exhaustive record of hospital work for the year. Owing to accident on the high seas the matter relating to hospitals in the Dominions has been perforce omitted.——*The Annual Charities Register and Digest, 1918* (London: Longmans, Green, and Co. Pp. 626. 5*s.* net), contains the usual lists of charities with particulars of their object, management, income, and the like, while short practical introductions to particular branches of charitable work have been added.——*Low's Handbook to the Charities of London, 1918* (London: Sampson Low, Marston, and Co. Pp. 254. 1*s.* 6*d.*), now in its eighty-third year of publication, retains its character as a brief and excellent alphabetical list of metropolitan charities, giving information as to their objects, date of formation, income, expenditure, address, and names of secretaries. The National Society for the Prevention of Cruelty to Children comes in for eulogy in the introduction.——The thirteenth issue of *The Girls' School Year Book, 1918*, the official reference book of the Association of Head Mistresses (London: The Year Book Press. Pp. 638. 6*s.* net), contains an alphabetical list of public schools for girls in Great Britain, along with full particulars of the staffs, fees, terms of admission, and scholarships; also an account of possible careers for girls, including those opened by the war, such as engineering and the cultivation of medicinal herbs. Special articles deal, among other subjects, with medical education, dentistry, pharmacy, nursing, sanitary inspection, and social and philanthropic work.

MINOR SURGERY IN THE FORECASTLE.

THIS is the captain's story. Surgery at sea, in the forecastle of a sailing ship, has its routine of practice, just as you have yours in the profession. Assume a sailor develops a boil. For the first two or three days it is subjected to the interested examination of the other sailors, who sit in committee on it to advise whether it is an abscess or a boil, or what; and the treatment is discussed at great length, the various consultants advising the patient to take pitch pills for it, or to put on hot fomentations, with long discussions as to the value of each treatment in the experience of those present. But at last it appears that further measures must be taken; it is necessary to open the boil. The opening is a procedure of the highest interest to everybody. It is done with a sheath knife, held half an inch from the point to prevent mischief, and the boil is opened with a long incision. A bit of rope is then unlaid (untwisted), and a couple of strands are arranged one on each side of the swelling, and they are twisted together at each end, compressing the swelling, and forcing out of the boil the core, about which everyone is expectant. The treatment is, you observe, properly antiseptic, and by the gradual twisting together of the strands the core is squeezed out and then removed in the loop of the strand. As for further treatment there is probably none, and the place heals up, but sometimes a drop of coal-tar is put in the cavity, and that has the advantage of giving the patient great pain, and assuring him that everything possible has been done by his skilful shipmates to secure his recovery.

THE INTRAMUSCULAR INJECTION OF MERCURIC CHLORIDE IN INFLUENZA.

Messrs. Allen and Hanburys have drawn our attention to an important point in regard to the use of an intramuscular injection of perchloride of mercury in the alleged successful treatment of influenza reported in the *Times* of Nov. 26th. The *Times* correspondent, writing from Athens, states "that the treatment consisted of intramuscular injections of 3 in 100 of the following solution: perchloride of mercury, chlorate of sodium, and distilled water." If this means a 3 per cent. solution of the mercuric salt (which may not necessarily be the case), then 1 minim would contain the maximum dose of corrosive sublimate, namely, 1/30 gr. The intramuscular injection of 1/60 to 1/30 gr. of mercuric chloride is a well-known measure. Possibly the action of the mercuric salt may be modified by the addition of an oxidant like chlorate of sodium. The formula as given is vague and no attempt to follow it should be made until clearer details are to hand.

FUEL ECONOMY.

THE continued shortage of fuel makes timely the reprint of the series of lectures delivered in the Department of Heating and Ventilating at University College, London, during the session 1918. These lectures on Fuel Economy and Cooking Apparatus, by Mr. A. H. Barker, B.Sc., reprinted in pamphlet form from the *Builder* (4, Catherine-street, Aldwych, W.C. 2, price 1*s.* 6*d.*), lay down the general principles on which it is hoped improvements in economy of fuel may be effected. Diagrams illustrate various forms of economical and wasteful stoves, while the questions of efficiency and cost are graphically set out where desirable. The pamphlet may be read with advantage as an introduction to the Fuel Economy Exhibition now showing in Trafalgar-square, London.

ROYAL INSTITUTION THE CHRISTMAS COURSE OF JUVENILE LECTURES.

THE ninety-third illustrated Christmas Course of Juvenile Lectures, founded at the Royal Institution in 1826 by Michael Faraday, will be delivered this year by Professor D'Arcy Thompson, C.B., F.R.S., his title being "The Fish of the Sea." The subjects are as follows: Jelly-fishes, Tuesday, Dec. 31st; Star-fishes, Thursday, Jan. 2nd; Cray-fishes, Saturday, Jan. 4; Cuttle-fishes, Tuesday, Jan. 7th; The Herring Fishery, Thursday, Jan. 9th; The Whale Fishery, Saturday, Jan. 11th. The lecture hour is 3 P.M.

FALCONER'S ARTHROMETER.

Dr. Charles F. Sonntag writes from the Special Military Surgical Hospital, Shepherd's Bush, in regard to the figures printed on the arthrometer illustrated on p. 632 of THE LANCET of Nov. 9th—viz., "knee-joint, 120°; elbow-joint, 140°." These figures cannot be intended to represent the full range of normal movement of these joints. Dr. Sonntag has measured the range of movement of his own knee-joint and finds it to be 158°. We learn from Dr. Fortescue Fox that the measurements of knee movement at the Red Cross Clinic are taken with the patient lying *prone* on the couch—that is to say, with the hip extended. Simultaneous flexion at the hip allows of relaxation of the extensors of the knee, when an additional 20° knee-flexion can be obtained. Dr. Fox adds that in recording measurements the posture should always be stated.